

FDMS8674 N-Channel PowerTrench[®] MOSFET **30V, 21A, 5.0m**Ω

Features

- Max $r_{DS(on)} = 5.0 m\Omega$ at $V_{GS} = 10V$, $I_D = 17A$
- Max $r_{DS(on)} = 8.0 \text{m}\Omega$ at $V_{GS} = 4.5 \text{V}$, $I_D = 14 \text{A}$
- Advanced Package and Silicon combination for low $r_{\text{DS}(\text{on})}$ and high efficiency
- MSL1 robust package design
- RoHS Compliant

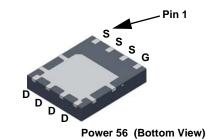


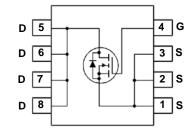
General Description

The FDMS8674 has been designed to minimize losses in power conversion application. Advancements in both silicon and package technologies have been combined to offer the lowest $r_{\text{DS(on)}}$ while maintaining excellent switching performance.

Applications

- Computing VR & IMVP Vcore
- Secondary Side Synchronous Rectifier
- POL DC/DC Converter
- Oring FET/ Load Switch





MOSFET Maximum Ratings T_A = 25°C unless otherwise noted

Symbol	Parameter			Ratings	Units
V _{DS}	Drain to Source Voltage			30	V
V _{GS}	Gate to Source Voltage			±20	V
	Drain Current -Continuous (Package limited)	$T_{C} = 25^{\circ}C$		21	
	-Continuous (Silicon limited)	$T_{C} = 25^{\circ}C$		94	
D	-Continuous	$T_A = 25^{\circ}C$	(Note 1a)	17	Α
	-Pulsed			150	
E _{AS}	Single Pulse Avalanche Energy		(Note 3)	181	mJ
P _D	Power Dissipation	$T_{C} = 25^{\circ}C$	78		W
	Power Dissipation	$T_A = 25^{\circ}C$	(Note 1a)	2.5	VV
T _J , T _{STG}	Operating and Storage Junction Temperature Range			-55 to +150	°C

Thermal Characteristics

$R_{ ext{ heta}JC}$	Thermal Resistance, Junction to Case	1.6	°C/W
R_{\thetaJA}	Thermal Resistance, Junction to Ambient (Note	a) 50	C/vv

Package Marking and Ordering Information

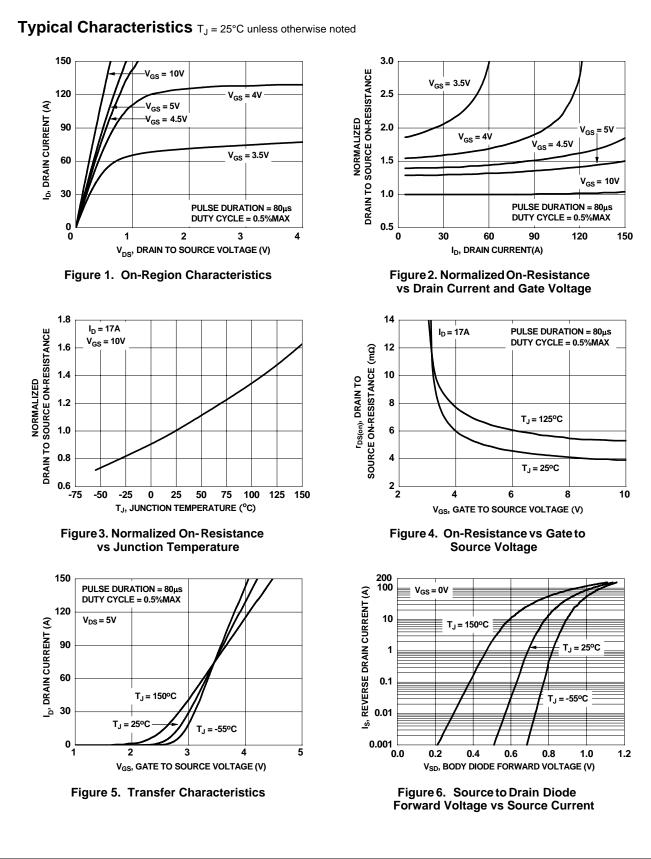
Device Marking	Device	Package	Reel Size	Tape Width	Quantity
FDMS8674	FDMS8674	Power 56	13"	12mm	3000units

April 2008

$\begin{array}{ c c c c c } \hline Pain to Source Breakdown Voltage & I_D = 250 \mu A, V_{GS} = 0V & 30 & V \\ \hline MBV_{DSS} & Breakdown Voltage Temperature & I_D = 250 \mu A, referenced to 25°C & 25 & mV^{Prince} \\ \hline Dress & Zero Gate Voltage Drain Current & V_{DS} = 24V, V_{GS} = 0V & 1 & \mu A \\ \hline Dress & Gate to Source Leakage Current & V_{GS} = 420V, V_{DS} = 0V & 4100 & nA \\ \hline Dress & Gate to Source Threshold Voltage & V_{GS} = 420V, V_{DS} = 0V & 4100 & nA \\ \hline Dress & Gate to Source Threshold Voltage & V_{GS} = 1250 \mu A & 1.0 & 1.8 & 3.0 & V \\ \hline Dress & Gate to Source Threshold Voltage & V_{GS} = 10V, I_D = 250 \mu A & 1.0 & 1.8 & 3.0 & V \\ \hline Dress & Gate to Source Threshold Voltage & V_{GS} = 10V, I_D = 17A & 4.1 & 5.0 \\ \hline Dress & Temperature Coefficient & V_{GS} = 10V, I_D = 17A & 4.1 & 5.0 \\ \hline V_{GS} = 10V, I_D = 17A & 4.1 & 5.0 \\ \hline V_{GS} = 10V, I_D = 17A & 4.1 & 5.0 \\ \hline V_{GS} = 10V, I_D = 17A & 87 & S \\ \hline Dress & Forward Transconductance & V_{DS} = 10V, I_D = 17A & 87 & S \\ \hline Dress & Qutput Capacitance & V_{DS} = 15V, V_{GS} = 0V, \\ \hline Trans & Reverse Transfer Capacitance & f = 1MHz & 0.9 & \Omega \\ \hline Dress & Qutput Capacitance & f = 1MHz & 0.9 & \Omega \\ \hline Dress & Turn-On Delay Time & V_{DS} = 15V, I_D = 17A, V_{GS} = 6\Omega & 26 & 422 & ns \\ \hline Dress & Turn-On Delay Time & V_{DS} = 10V, R_{GEN} = 6\Omega & 26 & 422 & ns \\ \hline Dress & Turn-On Delay Time & V_{DS} = 0V to 10V \\ \hline Dress & Turn-On Delay Time & V_{DS} = 0V to 10V \\ \hline Dress & Turn-On Delay Time & V_{DS} = 0V to 10V \\ \hline Dress & Turn-On Delay Time & V_{DS} = 0V to 10V \\ \hline Dress & Turn-On Delay Time & 0.26 & 377 & nC \\ \hline Dress & Turn-On Delay Time & V_{DS} = 0V to 10V \\ \hline Dress & Turn-On Delay Time & 0.26 & 377 & nC \\ \hline Dress & Turn-On Delay Time & 0.26 & 377 & nC \\ \hline Dress & Turn-On Delay Time & 0.26 & 377 & nC \\ \hline Dress & Turn-On Delay Time & 0.26 & 377 & nC \\ \hline Dress & Turn-On Delay Time & 0.26 & 377 & nC \\ \hline Dress & Turn-On Delay Time & 0.26 & 377 & nC \\ \hline Dress & Turn-On Delay Time & 0.26 & 377 & nC \\ \hline Dress & Turn-On Delay Time & 0.26 & 377 & nC \\ \hline Dress & Turn-On Delay Time & 0.2$	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{ c c c c } \hline Drain to Source Breakdown Voltage & I_D = 250 \mu A, V_{GS} = 0V & 30 & V \\ \hline Breakdown Voltage Temperature & I_D = 250 \mu A, referenced to 25°C & 25 & mV/°C \\ \hline Zero Gate Voltage Drain Current & V_{DS} = 24V, V_{GS} = 0V & 1 & \mu A \\ \hline Gate to Source Leakage Current & V_{GS} = ±20V, V_{DS} = 0V & \pm 100 & nA \\ \hline aracteristics \\ \hline Gate to Source Threshold Voltage & V_{GS} = V_{DS}, I_D = 250 \mu A & 1.0 & 1.8 & 3.0 & V \\ \hline Gate to Source Threshold Voltage & I_D = 250 \mu A, referenced to 25°C & -6 & mV/°C \\ \hline Gate to Source Threshold Voltage & I_D = 250 \mu A, referenced to 25°C & -6 & mV/°C \\ \hline Static Drain to Source On Resistance & V_{GS} = 10V, I_D = 17A & 4.1 & 5.0 \\ \hline V_{GS} = 4.5V, I_D = 14A & 5.8 & 8.0 \\ \hline V_{GS} = 10V, I_D = 17A, T_J = 125°C & 5.8 & 8.3 \\ \hline Forward Transconductance & V_{DD} = 10V, I_D = 17A & 87 & S \\ \hline Input Capacitance & V_{DD} = 10V, I_D = 17A & 1745 & 2320 & pF \\ \hline Output Capacitance & f = 1MHz & 130 & 195 & pF \\ \hline Gate Resistance & f = 1MHz & 0.9 & \Omega \\ \hline Input Characteristics & Input Capacitance & f = 1MHz & 0.9 & \Omega \\ \hline Input Characteristics & Input Capacitance & f = 10V, V_{DD} = 15V, V_{GS} = 0V, \\ \hline Input Capacitance & V_{DD} = 15V, V_{DS} = 17A, \\ \hline MUthoreon & MUthoreon $
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Breakdown Voltage Temperature Coefficient $I_D = 250\mu$ A, referenced to 25° C25mV/°CZero Gate Voltage Drain Current $V_{DS} = 24V, V_{GS} = 0V$ 1 μ AGate to Source Leakage Current $V_{GS} = \pm 20V, V_{DS} = 0V$ ± 100 nAaracteristicsGate to Source Threshold Voltage $V_{GS} = \pm 20V, V_{DS} = 0V$ 1.01.83.0Von Gate to Source Threshold Voltage Temperature Coefficient $V_{GS} = V_{DS}, I_D = 250\mu$ A1.01.83.0Von Gate to Source Threshold Voltage Temperature Coefficient $V_{DS} = 10V, I_D = 17A$ 4.15.0mV/°CStatic Drain to Source On Resistance $V_{GS} = 10V, I_D = 17A$ 4.15.88.0mΩVGS = 10V, I_D = 17A, T_J = 125°C5.88.3mΩmΩForward Transconductance $V_{DD} = 10V, I_D = 17A$ 87Sic Characteristics $V_{DS} = 15V, V_{GS} = 0V, f = 1MHz$ 130195pFGate Resistancef = 1MHz0.9 Ω Ω ing Characteristics $f = 1MHz$ 0.9 Ω Ω ing Characteristics $I_{10} = 15V, I_D = 17A, V_{OS} = 6\Omega$ Ω Ω ing Characteristics $I_{10} = 15V, I_D = 17A, V_{OS} = 6\Omega$ Ω Ω ing Characteristics $I_{10} = 15V, I_D = 17A, V_{OS} = 6\Omega$ Ω Ω ing Characteristics $I_{10} = 15V, I_D = 17A, V_{OS} = 6\Omega$ $I_{10} = 10$ ing Characteristics $I_{10} = 15V, I_D = 17A, V_{OS} = 6\Omega$ $I_{10} = 10$
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Breakdown Voltage Temperature Coefficient $I_D = 250\mu$ A, referenced to 25° C25mV/°CZero Gate Voltage Drain Current $V_{DS} = 24V, V_{GS} = 0V$ 1 μ AGate to Source Leakage Current $V_{GS} = \pm 20V, V_{DS} = 0V$ ± 100 nAaracteristicsGate to Source Threshold Voltage $V_{GS} = \pm 20V, V_{DS} = 0V$ 1.01.83.0Von Gate to Source Threshold Voltage Temperature Coefficient $V_{GS} = V_{DS}, I_D = 250\mu$ A1.01.83.0Von Gate to Source Threshold Voltage Temperature Coefficient $V_{DS} = 10V, I_D = 17A$ 4.15.0mV/°CStatic Drain to Source On Resistance $V_{GS} = 10V, I_D = 17A$ 4.15.88.0mΩVGS = 10V, I_D = 17A, T_J = 125°C5.88.3mΩmΩForward Transconductance $V_{DD} = 10V, I_D = 17A$ 87Sic Characteristics $V_{DS} = 15V, V_{GS} = 0V, f = 1MHz$ 130195pFGate Resistancef = 1MHz0.9 Ω Ω ing Characteristics $f = 1MHz$ 0.9 Ω Ω ing Characteristics $I_{10} = 15V, I_D = 17A, V_{OS} = 6\Omega$ Ω Ω ing Characteristics $I_{10} = 15V, I_D = 17A, V_{OS} = 6\Omega$ Ω Ω ing Characteristics $I_{10} = 15V, I_D = 17A, V_{OS} = 6\Omega$ Ω Ω ing Characteristics $I_{10} = 15V, I_D = 17A, V_{OS} = 6\Omega$ $I_{10} = 10$ ing Characteristics $I_{10} = 15V, I_D = 17A, V_{OS} = 6\Omega$ $I_{10} = 10$
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c } l_{GSS} & Gate to Source Leakage Current & V_{GS} = \pm 20V, V_{DS} = 0V & \pm 100 \\ \hline \\$	Gate to Source Leakage Current $V_{GS} = \pm 20V, V_{DS} = 0V$ ± 100 nAaracteristicsGate to Source Threshold Voltage Temperature Coefficient $V_{GS} = V_{DS}, I_D = 250\mu$ A1.01.83.0VGate to Source Threshold Voltage Temperature Coefficient $I_D = 250\mu$ A, referenced to 25° C-6mV/°CStatic Drain to Source On Resistance $V_{GS} = 10V, I_D = 17A$ 4.15.0mQ $V_{GS} = 10V, I_D = 17A, T_J = 125^{\circ}$ C5.88.0mQForward Transconductance $V_{DD} = 10V, I_D = 17A$ 87Sthic Characteristics $V_{DS} = 15V, V_{GS} = 0V, f = 10Hz$ 17452320pFOutput Capacitance $V_{DS} = 15V, V_{GS} = 0V, f = 10Hz$ 130195pFGate Resistancef = 1MHz0.9 Ω Ω ing Characteristics $V_{DD} = 15V, I_D = 17A, V_{OS} = 10V, I_{OS} = 10V, I$
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c } I_{GSS} & Gate to Source Leakage Current & V_{GS} = \pm 20V, V_{DS} = 0V & \pm 100 \\ \hline \\$	aracteristicsGate to Source Threshold Voltage Temperature Coefficient $V_{GS} = V_{DS}$, $I_D = 250\mu$ A1.01.83.0VGate to Source Threshold Voltage Temperature Coefficient $I_D = 250\mu$ A, referenced to 25° C-6mV/°CStatic Drain to Source On Resistance $V_{GS} = 10V$, $I_D = 17A$ 4.15.0V_{GS} = 10V, $I_D = 17A$ 4.1 5.0V_{GS} = 10V, $I_D = 17A$ 5.88.0Max $V_{GS} = 10V$, $I_D = 17A$, $T_J = 125^{\circ}$ C5.8Forward Transconductance $V_{DD} = 10V$, $I_D = 17A$ 87Stic Characteristics $V_{DS} = 15V$, $V_{GS} = 0V$, f = 1MHz1745Quput Capacitance Gate Resistance $f = 1MHz$ 0.9 $Gate Resistance$ $f = 1MHz$ 0.9 Ω Ω ing Characteristics $V_{DD} = 15V$, $I_D = 17A$, $V_{CD} = 15V$, $I_D = 17A$, $V_{CD} = 10V$ 11 Ω <tr< td=""></tr<>
	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{tabular}{ c c c c c } \hline Gate to Source Threshold Voltage & V_{GS} = V_{DS}, \ I_D = 250 \mu A & 1.0 & 1.8 & 3.0 & V \\ \hline Gate to Source Threshold Voltage & I_D = 250 \mu A, referenced to 25°C & -6 & mV/°C \\ \hline I_D = 250 \mu A, referenced to 25°C & -6 & mV/°C \\ \hline V_{GS} = 10V, \ I_D = 17A & 4.1 & 5.0 & V_{GS} = 4.5V, \ I_D = 14A & 5.8 & 8.0 & m\Omega \\ \hline V_{GS} = 10V, \ I_D = 17A, \ T_J = 125°C & 5.8 & 8.3 & \hline V_{DD} = 10V, \ I_D = 17A & 87 & S \\ \hline Input Capacitance & V_{DD} = 10V, \ I_D = 17A & 87 & S \\ \hline Input Capacitance & V_{DD} = 10V, \ I_D = 17A & 87 & S \\ \hline Input Capacitance & V_{DS} = 15V, \ V_{GS} = 0V, & 1745 & 2320 & pF \\ \hline Output Capacitance & f = 1MHz & 130 & 195 & pF \\ \hline Gate Resistance & f = 1MHz & 0.9 & \Omega \\ \hline Input Capacitance & f = 1MHz & 0.9 & \Omega \\ \hline Input Capacitance & f = 10Hz & 0.9 & \Omega \\ \hline Input Capacitance & f = 10Hz & 0.9 & \Omega \\ \hline Input Capacitance & f = 10Hz & 0.9 & 0.9 & \Omega \\ \hline Input Capacitance & f = 10Hz & 0.9 & 0.9 & \Omega \\ \hline Input Capacitance & f = 10Hz & 0.9 & 0.9 & \Omega \\ \hline Input Capacitance & f = 10Hz & 0.9 & 0$
	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{tabular}{ c c c c c } \hline Gate to Source Threshold Voltage & V_{GS} = V_{DS}, \ I_D = 250 \mu A & 1.0 & 1.8 & 3.0 & V \\ \hline Gate to Source Threshold Voltage & I_D = 250 \mu A, referenced to 25°C & -6 & mV/°C \\ \hline I_D = 250 \mu A, referenced to 25°C & -6 & mV/°C \\ \hline V_{GS} = 10V, \ I_D = 17A & 4.1 & 5.0 \\ \hline V_{GS} = 4.5V, \ I_D = 14A & 5.8 & 8.0 \\ \hline V_{GS} = 10V, \ I_D = 17A, \ T_J = 125°C & 5.8 & 8.3 \\ \hline Forward Transconductance & V_{DD} = 10V, \ I_D = 17A & 87 & S \\ \hline input Capacitance & V_{DD} = 10V, \ I_D = 17A & 87 & S \\ \hline Input Capacitance & V_{DS} = 15V, \ V_{GS} = 0V, \ f = 1MHz & 130 & 195 & pF \\ \hline Gate Resistance & f = 1MHz & 0.9 & \Omega \\ \hline ing Characteristics & \hline Turn-On Delay Time & V_{DD} = 15V, \ I_D = 17A, \ V_{DS} = 16Q & 4 & 10 & ns \\ \hline V_{DS} = 10V, \ Recru = 6Q & \hline \end{array}$
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{tabular}{ c c c c c } \hline Gate to Source Threshold Voltage Temperature Coefficient & I_D = 250 \mu A, referenced to 25°C & -6 & mV/°C \\ \hline I_D = 250 \mu A, referenced to 25°C & -6 & mV/°C \\ \hline V_{GS} = 10V, I_D = 17A & 4.1 & 5.0 \\ \hline V_{GS} = 4.5V, I_D = 14A & 5.8 & 8.0 \\ \hline V_{GS} = 10V, I_D = 17A, T_J = 125°C & 5.8 & 8.3 \\ \hline Forward Transconductance & V_{DD} = 10V, I_D = 17A & 87 & S \\ \hline Input Capacitance & V_{DS} = 15V, V_{GS} = 0V, \\ \hline Output Capacitance & f = 1MHz & 130 & 195 & pF \\ \hline Gate Resistance & f = 1MHz & 0.9 & \Omega \\ \hline Input Capacitance & f = 1MHz & 0.9 & \Omega \\ \hline Input Capacitance & f = 1000 & 11000 & 11000 & 10000 & 0.0 \\ \hline Input Capacitance & f = 10000 & 0.0 & 0.0 & 0.0 \\ \hline Input Capacitance & f = 10000 & 0.0 & 0.0 & 0.0 & 0.0 \\ \hline Input Capacitance & f = 10000 & 0.0 & 0.0 & 0.0 & 0.0 \\ \hline Input Capacitance & f = 100000 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\ \hline Input Capacitance & f = 100000 & 0.0 &$
		$\begin{tabular}{ c c c c c c c c c c c } \hline V_{GS} = 10V, \ I_D = 17A & 4.1 & 5.0 \\ \hline V_{GS} = 4.5V, \ I_D = 14A & 5.8 & 8.0 \\ \hline V_{GS} = 10V, \ I_D = 17A, \ T_J = 125^\circ C & 5.8 & 8.3 \\ \hline \hline Forward Transconductance & V_{DD} = 10V, \ I_D = 17A & 87 & S \\ \hline \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$
$\begin{array}{ c c c c c c } \hline Static Drain to Source On Resistance} & V_{GS} = 4.5V, I_D = 14A & 5.8 & 8.0 \\ \hline V_{GS} = 10V, I_D = 17A, T_J = 125^\circ C & 5.8 & 8.3 \\ \hline V_{DS} = 10V, I_D = 17A, T_J = 125^\circ C & 5.8 & 8.3 \\ \hline V_{DD} = 10V, I_D = 17A & 87 & S \\ \hline Oynamic Characteristics \\ \hline C_{rss} & Input Capacitance & V_{DS} = 15V, V_{GS} = 0V, \\ \hline C_{rss} & Reverse Transfer Capacitance & f = 1MHz & 0.9 & \Omega \\ \hline Switching Characteristics \\ \hline d_{001} & Turn-On Delay Time & V_{DD} = 15V, I_D = 17A, \\ \hline r_{c} & Rise Time & V_{GS} = 10V, R_{GEN} = 6\Omega & 111 & 20 & ns \\ \hline d_{0ff} & Turn-Off Delay Time & V_{DD} = 15V, I_D = 17A, \\ \hline r_{d} & Fall Time & V_{GS} = 0V to 10V \\ \hline A_{g} & Total Gate Charge & V_{GS} = 0V to 5V & V_{DD} = 15V, \\ \hline A_{g} & Gate to Source Charge & V_{GS} = 0V to 5V & V_{DD} = 15V, \\ \hline A_{g} & Gate to Source Charge & V_{GS} = 0V to 5V & V_{DD} = 15V, \\ \hline A_{g} & Gate to Source Charge & V_{GS} = 0V to 5V & V_{DD} = 15V, \\ \hline A_{g} & Gate to Source Charge & V_{GS} = 0V to 5V & V_{DD} = 15V, \\ \hline A_{g} & Gate to Source Charge & V_{GS} = 0V to 5V & V_{DD} = 15V, \\ \hline A_{g} & Gate to Source Charge & V_{GS} = 0V to 5V & V_{DD} = 15V, \\ \hline A_{g} & Gate to Source Charge & V_{GS} = 0V to 5V & V_{DD} = 15V, \\ \hline A_{g} & Gate to Source Charge & V_{GS} = 0V to 5V & V_{DD} = 15V, \\ \hline A_{g} & Gate to Source Charge & V_{GS} = 0V to 5V & V_{DD} = 15V, \\ \hline A_{g} & Gate to Source Charge & V_{GS} = 0V to 5V & V_{DD} = 15V, \\ \hline A_{g} & Gate to Source Charge & V_{GS} = 0V to 5V & V_{DD} = 15V, \\ \hline A_{g} & Gate to Source Charge & V_{GS} = 0V to 5V & V_{DD} = 15V, \\ \hline A_{g} & Gate to Source Charge & V_{GS} = 0V to 5V & V_{DD} = 15V, \\ \hline A_{g} & Gate to Source Charge & V_{GS} = 0V to 5V & V_{DD} = 15V, \\ \hline A_{g} & A & A & 0 & nC \\ \hline & A & A & 0 & nC \\ \hline & A & A & 0 & nC \\ \hline & A & A & A & 0 & nC \\ \hline & A & A & A & 0 & nC \\ \hline & A & A & A & 0 & nC \\ \hline & A & A & A & 0 & nC \\ \hline & A & A & A & 0 & nC \\ \hline & A & A & A & 0 & nC \\ \hline & A & A & A & 0 & nC \\ \hline & A & A & A & 0 & nC \\ \hline & A & A & A & A & 0 & nC \\ \hline & A & A & A & 0 & nC \\ \hline & A & A & A & $		$\begin{array}{ c c c c c c } \hline Static Drain to Source On Resistance} & \hline V_{GS} = 4.5 V, \ I_D = 14 A & 5.8 & 8.0 \\ \hline V_{GS} = 10 V, \ I_D = 17 A, \ T_J = 125^\circ C & 5.8 & 8.3 \\ \hline \hline Forward Transconductance} & V_{DD} = 10 V, \ I_D = 17 A & 87 & S \\ \hline \textbf{ic Characteristics} & & & & & & \\ \hline \textbf{input Capacitance} & & & & & & & & \\ \hline Output Capacitance & & & & & & & & & \\ \hline Output Capacitance & & & & & & & & & & & \\ \hline Output Capacitance & & & & & & & & & & & & & \\ \hline Reverse Transfer Capacitance & & & & & & & & & & & & & & & & & & &$
$\begin{tabular}{ c c c c c c c } \hline V_{GS} = 10V, \ I_D = 17A, \ T_J = 125^\circ C & 5.8 & 8.3 \\ \hline V_{GS} = 10V, \ I_D = 17A, \ T_J = 125^\circ C & 5.8 & 8.3 \\ \hline V_{DD} = 10V, \ I_D = 17A & 87 & S \\ \hline Oynamic Characteristics \\ \hline C_{iss} & Input Capacitance & V_{DS} = 15V, \ V_{GS} = 0V, \\ \hline f = 1MHz & 860 & 1145 & pF \\ \hline C_{rss} & Reverse Transfer Capacitance & f = 1MHz & 0.9 & \Omega \\ \hline R_{rss} & Gate Resistance & f = 1MHz & 0.9 & \Omega \\ \hline Oynamic Characteristics \\ \hline C_{rss} & Reverse Transfer Capacitance & f = 1MHz & 0.9 & \Omega \\ \hline Oynamic Characteristics & f = 1MHz & 0.9 & \Omega \\ \hline Oynamic Characteristics & f = 1MHz & 0.9 & \Omega \\ \hline Oynamic Characteristics & f = 1MHz & 0.9 & \Omega \\ \hline Oynamic Characteristics & f = 1MHz & 0.9 & \Omega \\ \hline Oynamic Characteristics & f = 1000 & 0.9 & \Omega \\ \hline Oynamic Characteristics & f = 1000 & 0.9 & \Omega \\ \hline Oynamic Characteristics & f = 1000 & 0.9 & \Omega \\ \hline Oynamic Characteristics & f = 1000 & 0.9 & \Omega \\ \hline Oynamic Characteristics & 0.9 &$	$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	V _{GS} = 10V, I _D = 17A, T _J = 125°C 5.8 8.3 Forward Transconductance V _{DD} = 10V, I _D = 17A 87 S Aic Characteristics No. 10 = 17A 87 S Input Capacitance V _{DS} = 15V, V _{GS} = 0V, f = 1MHz 1745 2320 pF Output Capacitance V _{DS} = 15V, V _{GS} = 0V, f = 1MHz 130 195 pF Gate Resistance f = 1MHz 0.9 Ω ing Characteristics Turn-On Delay Time V _{DD} = 15V, I _D = 17A, V _{OS} = 10V, Rorn = 6Ω 11 20 ns
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Forward Transconductance $V_{DD} = 10V, I_D = 17A$ 87Sic CharacteristicsInput Capacitance $V_{DS} = 15V, V_{GS} = 0V, f = 1MHz$ 17452320pFOutput Capacitance $f = 1MHz$ 8601145pFReverse Transfer Capacitance $f = 1MHz$ 130195pFGate Resistance $f = 1MHz$ 0.9 Ω ing CharacteristicsTurn-On Delay Time $V_{DD} = 15V, I_D = 17A, V_{CS} = 10V, Roma = 6\Omega$
Dynamic CharacteristicsDynamic CharacteristicsDissInput Capacitance $V_{DS} = 15V, V_{GS} = 0V,$ 17452320pFDossOutput Capacitance $f = 1MHz$ 8601145pFDrssReverse Transfer Capacitance $f = 1MHz$ 0.9 Ω Reverse Transfer Capacitance $f = 1MHz$ 0.9 Ω RegGate Resistance $f = 1MHz$ 0.9 Ω Reverse Transfer Capacitance $f = 1MHz$ 0.9 Ω Multicity Turn-On Delay Time $f = 10MHz$ 0.9 Ω $f = 1000$ Turn-Off Delay Time $V_{DD} = 15V, I_D = 17A, V_{GS} = 0V to 10V$ $V_{DD} = 15V, I_D = 15V, I_D = 17A, I_A = 0, I_D = 17A, I_A $	Dynamic Characteristics C_{iss} Input Capacitance $V_{DS} = 15V, V_{GS} = 0V,$ 1745 2320 C_{oss} Output Capacitance $f = 1MHz$ 860 1145 C_{rss} Reverse Transfer Capacitance $f = 1MHz$ 130 195 R_g Gate Resistance $f = 1MHz$ 0.9 0.9 Switching Characteristics $t_{d(on)}$ Turn-On Delay Time $V_{DD} = 15V, I_D = 17A,$ 11 20 $t_{d(off)}$ Turn-Off Delay Time $V_{GS} = 10V, R_{GEN} = 6\Omega$ 26 42	ic CharacteristicsInput Capacitance $V_{DS} = 15V, V_{GS} = 0V,$ 17452320pFOutput Capacitance $f = 1MHz$ 8601145pFReverse Transfer Capacitance $f = 1MHz$ 130195pFGate Resistance $f = 1MHz$ 0.9 Ω ing CharacteristicsTurn-On Delay Time $V_{DD} = 15V, I_D = 17A,$ Rise Time $V_{CD} = 10V, R_{CFN} = 6\Omega$ 1120
$\begin{array}{c c c c c c c c } \hline Pisc & Input Capacitance & \\ \hline Piss & Output Capacitance & \\ \hline Coss & Output Capacitance & \\ \hline Crss & Reverse Transfer Capacitance & \\ \hline f = 1MHz & \\ \hline 130 & 195 & pF \\ \hline r & Rise Time & \\ \hline r & Rise Time & \\ \hline r & Rise Time & \\ \hline d(off) & Turn-On Delay Time & \\ \hline r & Rise Time & \\ \hline d(off) & Turn-Off Delay Time & \\ \hline r & Fall Time & \\ \hline Ag & Total Gate Charge & \\ \hline Ag & Total Gate Charge & \\ \hline Ag & Gate to Source Charge & \\ \hline Ag & Gate to Source Charge & \\ \hline \end{array} \begin{array}{c} V_{DS} = 15V, V_{GS} = 0V, \\ f = 1MHz & \\ \hline V_{DD} = 15V, I_D = 17A, \\ V_{GS} = 10V, R_{GEN} = 6\Omega & \\ \hline \end{array} \begin{array}{c} 111 & 20 & ns \\ \hline 111 & 20 & ns \\ \hline 111 & 20 & ns \\ \hline 110 & ns \\$	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Output Capacitance $V_{DS} = 15V, V_{GS} = 0V,$ f = 1MHz8601145pFReverse Transfer Capacitancef = 1MHz130195pFGate Resistancef = 1MHz0.9 Ω ing CharacteristicsTurn-On Delay Time $V_{DD} = 15V, I_D = 17A,$ $V_{CC} = 10V, Rome = 6\Omega$ 1120ns
z_{OSS} Output Capacitancef = 1MHz $above1145prz_{rss}Reverse Transfer Capacitancef = 1MHz130195pFR_gGate Resistancef = 1MHz0.9\OmegaSwitching Characteristicsd(on)Turn-On Delay TimeV_{DD} = 15V, I_D = 17A,1120nsrRise TimeV_{GS} = 10V, R_{GEN} = 6\Omega2642nsd(off)Turn-Off Delay TimeV_{GS} = 0V to 10V2637nCR_gTotal Gate ChargeV_{GS} = 0V to 5VV_{DD} = 15V, I_D = 17A,1420nCR_gTotal Gate ChargeV_{GS} = 0V to 5VV_{DD} = 15V, I_D = 17A,1420nCR_gGate to Source ChargeV_{GS} = 0V to 5VV_{DD} = 15V, I_D = 17A,1420nC$	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Output Capacitancef = 1MHz6601145pFReverse Transfer Capacitancef = 1MHz130195pFGate Resistancef = 1MHz0.9 Ω ing CharacteristicsTurn-On Delay Time $V_{DD} = 15V, I_D = 17A,$ 1120nsRise Time $V_{CS} = 10V, R_{CFN} = 6\Omega$ 410ns
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Switching Characteristics $f = 1MHz$ 0.9Switching Characteristics $V_{DD} = 15V, I_D = 17A,$ 1120 $t_{d(off)}$ Turn-On Delay Time $V_{GS} = 10V, R_{GEN} = 6\Omega$ 2642 $t_{d(off)}$ Turn-Off Delay Time $V_{GS} = 10V, R_{GEN} = 6\Omega$ 102642	Gate Resistance f = 1MHz 0.9 Ω ing Characteristics VDD = 15V, ID = 17A, 11 20 ns Rise Time VDD = 15V, ID = 17A, 4 10 ns
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	gTurn-On Delay TimeV_DD = 15V, ID = 17A, $t_{d(off)}$ Turn-Off Delay Time $V_{GS} = 10V, R_{GEN} = 6\Omega$ $t_{d(off)}$ Turn-Off Delay Time 26 $t_{d(off)}$ Turn-Off Delay Time 26	Turn-On Delay Time V _{DD} = 15V, I _D = 17A, 11 20 ns Rise Time V _{DD} = 15V, I _D = 17A, 4 10 ns
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	$t_{r} \qquad \text{Rise Time} \qquad \qquad V_{DD} = 15V, I_{D} = 17A, \\ V_{GS} = 10V, R_{GEN} = 6\Omega \qquad $	Rise Time $V_{DD} = 15V$, $I_D = 17A$,410ns $V_{CC} = 10V$, $R_{CCV} = 6Q$
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c} & & & \\ \hline t_{d(off)} & $	$V_{CS} = 10V$, $B_{CTN} = 60$
Fall Time310ns Q_g Total Gate Charge $V_{GS} = 0V \text{ to } 10V$ 26 37 nC Q_g Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 14 20 nC Q_{gs} Gate to Source Charge 4.8 nC		1 urn-Uri Delay Time 26 42 ns
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Q_{c} Total Gate Charge $V_{CS} = 0V$ to $10V$ 26 37	
R_{gs} Gate to Source Charge $I_D = 1/A$ 4.8 nC	Q_{-} Total Gate Charge $V_{OC} = 0V$ to 5V $V_{DD} = 15V$, 14 20	
<u><u> </u></u>		Total Gate Charge $V_{00} = 0V \text{ to } 5V$ $V_{DD} = 15V$, 14 20 pC
Add Gate to Drain "Willier" Charge 13.5 nC	<u> </u>	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nC
<u> </u>		Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nCGate to Source Charge4.8nC
Vrain-Source Diode Characteristics	$V_{cc} = 0V_{cc} = 2.1A$ (Note 2) 0.7 1.2	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nCGate to Source Charge4.8nCGate to Drain "Miller" Charge3.5nC
$V_{CS} = 0V_{LS} = 2.1A$ (Note 2) 0.7 1.2 V	V_{SD} Source to Drain Diode Forward Voltage $V_{GS} = 0.7, S = 2.177$ (100 2) 0.1 1.2 $V_{GS} = 0.0, I_S = 17A$ 0.8 1.2	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nCGate to Source ChargeGate to Drain "Miller" Charge3.5nCSource Diode Characteristics
V _{GS} = 0V, I _S = 2.1A (Note 2) 0.7 1.2 V	t Reverse Recovery Time 40 64	Total Gate Charge V _{GS} = 0V to 5V V _{DD} = 15V, I _D = 17A 14 20 nC Gate to Source Charge Gate to Drain "Miller" Charge 3.5 nC Source Diode Characteristics V _{GS} = 0V, I _S = 2.1A (Note 2) 0.7 1.2 V
$\frac{V_{GS} = 0V, I_S = 2.1A (Note 2)}{V_{GS} = 0V, I_S = 17A} \qquad \begin{array}{c c} 0.7 & 1.2 & V \\ \hline 0.8 & 1.2 & V \\ \hline 0.8 & 1.2 & V \\ \hline 0.8 & 0.8 & 0.8 \\ \hline 0.8 & 0.8 \\ \hline$	Q_{rr} Reverse Recovery Charge $I_F = 17A$, $dl/dt = 100A/\mu s$ 30 48	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nCGate to Source ChargeGate to Drain "Miller" Charge3.5nCSource Diode CharacteristicsSource to Drain Diode Forward Voltage $V_{GS} = 0V, I_S = 2.1A$ (Note 2)0.71.2V $V_{GS} = 0V, I_S = 17A$ 0.81.2VReverse Recovery Time4064ns
lgd Gate to Drain "Miller" Charge 3.5		Fall Time 26 42 Fall Time 3 10
vrain-Source Diode Characteristics		Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nCGate to Source ChargeGate to Drain "Miller" Charge3.5nC
		Total Gate Charge V _{GS} = 0V to 5V V _{DD} = 15V, I _D = 17A 14 20 nC Gate to Source Charge 3.5 nC Gate to Drain "Miller" Charge 3.5 nC
V _{GS} = 0V, I _S = 2.1A (Note 2) 0.7 1.2 V	Reverse Recovery Time 40 64	Total Gate Charge V _{GS} = 0V to 5V V _{DD} = 15V, I _D = 17A 14 20 nC Gate to Source Charge 3.5 nC Gate to Drain "Miller" Charge 3.5 nC
$\frac{V_{GS} = 0V, I_S = 2.1A (Note 2)}{V_{GS} = 0V, I_S = 17A} \qquad \begin{array}{c c} 0.7 & 1.2 & V \\ \hline 0.8 & 1.2 & V \\ \hline 0.8 & 1.2 & V \\ \hline 0.8 & 0.8 & 0.8 \\ \hline 0.8 & 0.8 \\ \hline$	$l_{r} = 1/A$, $dl/dt = 100A/us$	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nCGate to Source ChargeGate to Drain "Miller" Charge3.5nCSource Diode CharacteristicsSource to Drain Diode Forward Voltage $V_{GS} = 0V, I_S = 2.1A$ (Note 2)0.71.2V $V_{GS} = 0V, I_S = 17A$ 0.81.2VReverse Recovery Time4064ns
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	f Fall Time 3 10	ium-on Delay lime 26 42 ns
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	f Fall Time 3 10	1um-On Delay Time 26 42 ns
Fall Time310ns Q_g Total Gate Charge $V_{GS} = 0V \text{ to } 10V$ 26 37 nC Q_g Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 14 20 nC Q_gs Gate to Source Charge 4.8 nC		Iurn-On Delay Ilme 26 42 ns
Fall Time310ns Q_g Total Gate Charge $V_{GS} = 0V \text{ to } 10V$ 26 37 nC Q_g Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 14 20 nC Q_gs Gate to Source Charge 4.8 nC		וערח-טה Delay Ilme 26 42 ns
Fall Time310ns Q_g Total Gate Charge $V_{GS} = 0V \text{ to } 10V$ 26 37 nC Q_g Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 14 20 nC Q_gs Gate to Source Charge 4.8 nC		I um-Uit Delay Time 26 42 ns
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		Fall Time 3 10 ns
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	0 Total Gate Charge $V_{car} = 0V$ to $10V$ 26 37	
$I_{D} = 17A$ $I_{D} = 17A$ $I_{D} = 17A$	V ₁ 15V	$V_{aa} = 0V to 10V$
Ags Gate to Source Charge 4.8 nC		
<u><u> </u></u>		Total Gate Charge $V_{OO} = 0V$ to 5V $V_{DD} = 15V$, 14 20 pC
	<u> </u>	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nC
n i i ste to Lirain "Miller" L'harde S. C. hC	<u> </u>	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nC
And Gate to Drain "Miller" Charge IC	<u> </u>	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nC
Jaar Laate to Urain "Miller" Unarge 135 nC	<u> </u>	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nC
n is ate to Urain "Miller" Linarde C.	<u> </u>	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nC
Jaar Laate to Urain "Miller" Unarge 135 nC	<u> </u>	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nC
Add Gate to Drain "Willier" Charge 13.5 nC	<u> </u>	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nC
Agd Gate to Drain "Miller" Charge 3.5 nC	Q _{gd} Gate to Drain "Miller" Charge 3.5	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nC
Agd Gate to Drain "Miller" Unarge 3.5 nC	Qgd Gate to Drain "Miller" Charge 3.5	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nC
Agd Gate to Drain "Miller" Unarge 3.5 nC	Q _{gd} Gate to Drain "Miller" Charge 3.5	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nCGate to Source Charge $A.8$ nC
lgd Gate to Drain "Miller" Unarge 3.5 nC	Q_{gd} Gate to Drain "Miller" Charge 3.5	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nCGate to Source Charge $A.8$ nC
l _{gd} Gate to Drain Miller Charge 3.5 IIC	agd Gate to Drain Miller Charge 3.5	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nCGate to Source Charge $A.8$ nC
l _{gd} Gale to Dialit Miller Charge 5.5 Th	agd Gale to Drain Miller Charge 5.5	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nCGate to Source Charge $A.8$ nC
ImageImageImageImageImageImageImageImageImage	Q _{gd} Gate to Drain "Miller" Charge 3.5	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nC
1. IL-ste to Lirsin "Miller" L'harde	<u> </u>	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nC
<u><u> </u></u>	$V_{GS} = 0.0000$ lp = 17A	
$I_{D} = 17A$ $I_{D} = 17A$ $I_{D} = 17A$	V ₁ 15V	$V_{ab} = (1)/t_{ab} + (1)/t_{ab} = (1)/t_{ab} + (1)/t_{ab} = (1)/t_{ab} + (1)/t_{ab} + (1)/t_{ab} = (1)/t_{ab} + (1)/t_{$
$I_{D} = 17A$ $I_{D} = 17A$ $I_{D} = 17A$		Total Gate Charge $V_{aa} = 0/(to 10)/$
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Q _n Total Gate Charge V _{GS} = 0V to 10V 26 37	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	$0 \qquad \text{Total Cate Charge} \qquad \qquad 1/2 = 0/2 \pm 10/2 \qquad \qquad 26 \qquad 27$	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Q_{c} Total Gate Charge $V_{CS} = 0V$ to $10V$ 26 37	Total Gate Charge $V_{ca} = 0V(to 10V)$ 26 27 cC
$I_{D} = 17A$ $I_{D} = 17A$ $I_{D} = 17A$		Total Gate Charge $V_{ab} = 0 V_{ab} = 10 V_{ab}$
$I_{D} = 17A$ $I_{D} = 17A$ $I_{D} = 17A$	V ₁ 15/	
R_{gs} Gate to Source Charge $I_D = 1/A$ 4.8 nC	$Q_{\rm r}$ Total Gate Charge $V_{\rm OC} = 0V$ to 5V $V_{\rm DD} = 15V$, 14 20	$v_{\rm GS} = 0 v_{\rm IO} 10 v_{\rm IO}$ 20 37 IIC
<u><u> </u></u>	$V_{GS} = 0.0000$ lp = 17A	
<u><u> </u></u>		Total Gate Charge $V_{CC} = 0V$ to 5V $V_{DD} = 15V$, 14 20 pC
		Total Gate Charge $V_{CC} = 0V$ to 5V $V_{DD} = 15V$, 14 20 pC
	$Q_{\rm gs}$ Gate to Source Charge 4.8	Total Gate Charge $V_{OO} = 0V$ to 5V $V_{DD} = 15V$, 14 20 pC
	Q_{qs} Gate to Source Charge 4.8 4.8	Total Gate Charge $V_{OO} = 0V$ to 5V $V_{DD} = 15V$, 14 20 pC
<u><u> </u></u>		Total Gate Charge $V_{OO} = 0V$ to 5V $V_{DD} = 15V$, 14 20 pC
	Q_{qs} Gate to Source Charge 4.8 4.8	Total Gate Charge $V_{OO} = 0V$ to 5V $V_{DD} = 15V$, 14 20 pC
Cata ta Duaia (Mdillaw) Channa	Qgs Gate to Source Charge 4.8	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nC
	<u> </u>	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nC
	<u> </u>	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nC
	Qgs Gate to Source Charge 4.8	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nC
		Total Gate Charge $V_{OO} = 0V$ to 5V $V_{DD} = 15V$, 14 20 pC
<u><u> </u></u>	$v_{g} = 17A$	
<u><u> </u></u>	$rac{1}{2}$	Total Gate Charge $V_{OO} = 0V$ to 5V $V_{DD} = 15V$, 14 20 pC
<u><u> </u></u>	3 ID = 1/A	Total Gate Charge $V_{OO} = 0V$ to 5V $V_{DD} = 15V$, 14 20 pC
		Total Gate Charge $V_{OO} = 0V$ to 5V $V_{DD} = 15V$, 14 20 pC
	$Q_{\rm gs}$ Gate to Source Charge 4.8 4.8	Total Gate Charge $V_{OO} = 0V$ to 5V $V_{DD} = 15V$, 14 20 pC
Cata ta Dusia (NAULA) Change	Q_{gs} Gate to Source Charge 4.8	Total Gate Charge $V_{OO} = 0V$ to 5V $V_{DD} = 15V$, 14 20 pC
	Q_{gs} Gate to Source Charge 4.8 4.8	Total Gate Charge $V_{OO} = 0V$ to 5V $V_{DD} = 15V$, 14 20 pC
	Q_{gs} Gate to Source Charge 4.8 4.8	Total Gate Charge $V_{OO} = 0V$ to 5V $V_{DD} = 15V$, 14 20 pC
Cate to Ducin (Mdillaw) Channel	Qgs Gate to Source Charge 4.8	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nC
Costa ta Ovala MAllaw Obavaa	Qgs Gate to Source Charge 4.8	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nC
Cata ta Ducia (Millar) Channa	Ags Gate to Source Charge 4.8	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nC
		Total Gate Charge $V_{OO} = 0V$ to 5V $V_{DD} = 15V$, 14 20 pC
<u><u> </u></u>		Total Gate Charge $V_{OO} = 0V$ to 5V $V_{DD} = 15V$, 14 20 pC
		Total Gate Charge $V_{OO} = 0V$ to 5V $V_{DD} = 15V$, 14 20 pC
	<u>5</u>	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nC
Jaar Igare to Urain "Willer" Unarge 35 b	<u>5</u>	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nC
	<u> </u>	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nC
<u><u> </u></u>	$v_{g} = 17A$	
$I_{D} = 17A$ $I_{D} = 17A$ $I_{D} = 17A$	$\frac{1}{2}$	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	v_{g} Total Gate Charge $V_{GS} = 0V$ to $10V$ 26 37	Total Gate Charge $V_{ac} = 0V to 10V$ 26 27 cC
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	$V_{cs} = 0V$ to 10V 26 37	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	rail lime 3 10	
Fall Time310ns h_g Total Gate Charge $V_{GS} = 0V \text{ to } 10V$ $V_{DD} = 15V$,2637nC h_g Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$,1420nC h_{gs} Gate to Source Charge4.8nC		ium-on Delay lime 26 42 ns
Fall Time310nsgTotal Gate Charge $V_{GS} = 0V \text{ to } 10V$ 26 37 nCgTotal Gate Charge $V_{GS} = 0V \text{ to } 5V$ $I_D = 15V$, 14 20 nCgsGate to Source Charge 4.8 nC		
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	off) Turn-Off Delay Time 26 42	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	(off) Turn-Off Delay Time 26 42	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	d(off) Turn-Off Delay Time 26 42	
Fall Time310ns Q_g Total Gate Charge $V_{GS} = 0V \text{ to } 10V$ 26 37 nC Q_g Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 14 20 nC Q_{gs} Gate to Source Charge 4.8 nC		
Fall Time310ns Q_g Total Gate Charge $V_{GS} = 0V \text{ to } 10V$ 26 37 nC Q_g Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 14 20 nC Q_{gs} Gate to Source Charge 4.8 nC		1000-000 26 42 ns
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	f Fall Time 3 10	Ium-Off Delay Time 26 42 ns
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		Fall Time 3 10 ns
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Total Gate Charge $V_{GS} = 0V$ to $10V$ 26 37	Total Gate Charge $V_{car} = 0V to 10V$ 26 27 cc
$I_{gs} = 17A$ $I_{b} = 17A$ $I_{b} = 17A$ $I_{b} = 17A$	V ₁ – 15/	$V_{ab} = 0 V_{bb} t_{ab} t_{$
R_{gs} Gate to Source Charge $I_D = 1/A$ 4.8 nC	$V_{DD} = 15V$, $V_{DD} = 15V$, $V_{DD} = 15V$, $V_{DD} = 15V$, $V_{DD} = 16V$	
Ags Gate to Source Charge 4.8 nC	$v_{g} = 17A$	
<u><u> </u></u>		Total Gate Charge $V_{CC} = 0V$ to 5V $V_{DD} = 15V$, 14 20 pC
Cate to Ducin (Mdillaw) Channel	Ags Gate to Source Charge 4.8	Total Gate Charge $V_{GS} = 0V$ to $5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nC
) Cate to Ducin (Millow) Observe	A_{gs} Gate to Source Charge $I_D = 1/A$ 4.8	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nC
R_{gs} Gate to Source Charge $I_D = 1/A$ 4.8 ni	Q_g Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 14 20	
<u><u> </u></u>	r_{g} rotal cate charge $r_{gS} = 0.0000$ $r_{gS} = 17A$	
<u><u> </u></u>	Q_{gs} Gate to Source Charge 4.8 4.8	Total Gate Charge $V_{CC} = 0V$ to 5V $V_{DD} = 15V$, 14 20 pC
	Ags Gate to Source Charge 4.8	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nC
	<u></u>	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nC
Jad Usate to Urain "Miller" Unarge nC	<u> </u>	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nC
Agd Gate to Drain "Millier" Charge 3.5 nC	R _{gd} Gate to Drain "Miller" Charge 3.5	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nCGate to Source Charge $A.8$ nC
Igd Gate to Drain Miller Charge 3.5 nC	Igd Gate to Drain Willer Charge 3.5	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nCGate to Source Charge $A.8$ nC
l _{gd} Gate to Drain "Miller" Charge 3.5 nC	Agd Gate to Drain "Miller" Charge 3.5	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nCGate to Source Charge $A.8$ nC
	<u> </u>	Total Gate Charge $V_{GS} = 0V \text{ to } 5V$ $V_{DD} = 15V$, $I_D = 17A$ 1420nC
<u>-</u>		Total Gate Charge $V_{CC} = 0V$ to 5V $V_{DD} = 15V$, 14 20 pC
Ags Gate to Source Charge 4.8 nC	r_{g} four date charge r_{g} $r_{$	
D_{gs} Gate to Source Charge $I_D = 1/A$ 4.8 nC		
I_{gs} Gate to Source Charge $I_{\text{D}} = 1/A$ 4.8 nC	$V_{DD} = 15V$, $V_{DD} = 15V$, $V_{DD} = 15V$, $V_{DD} = 15V$, $V_{DD} = 16V$	$ v_{\rm GS} = 0 \ v_{\rm IO} 0 \ v_{\rm IO} 20 37 10$
$I_{\text{gs}} = 17A \qquad 1.4 2.0 1.6 1.6 $	V/15//	
$I_{gs} = 17A$ $I_{b} = 17A$ $I_{b} = 17A$ $I_{b} = 17A$	V ₁ – 15/	
$I_{gs} = 0.000 \text{ Gale onlarge} = 0.000 \text{ Gg} = 0.000 \text{ Gg} = 17\text{A}$ $I_D = 17\text{A}$ 4.8 nC	V - 15/	
l _{gs} Gate to Source Charge 1 _D = 1/A 4.8 nC	Total Gate Charge $V_{CC} = 0V$ to 5V $V_{DD} = 15V$, 14 20	$v_{\rm GS} = 0 v_{\rm IO} 10 v_{\rm IO}$ 20 37 IIC

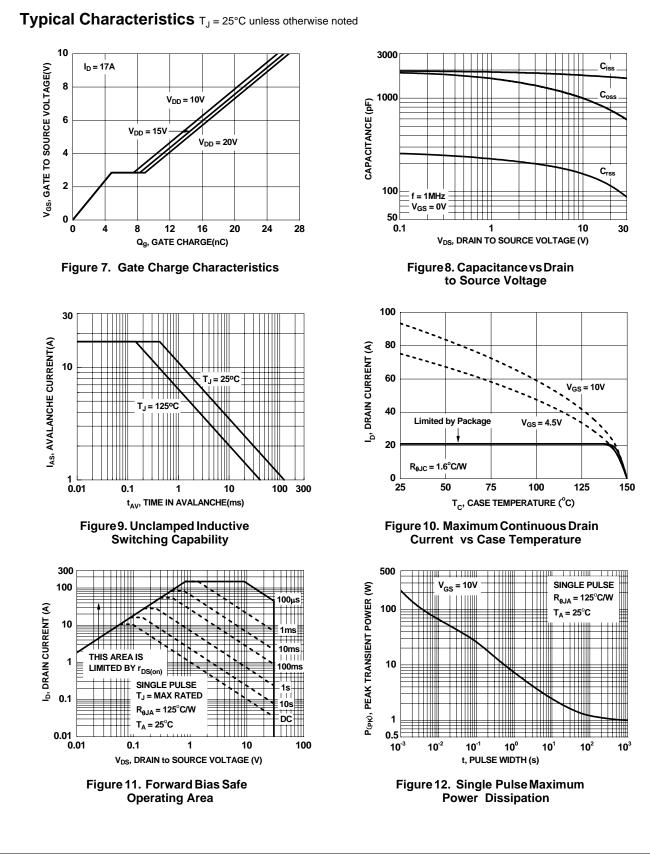
2. Pulse Test: Pulse Width < 300 μ s, Duty cycle < 2.0%. 3. Starting T_J = 25°C, L = 3mH, I_{AS} = 11A, V_{DD} = 30V, V_{GS} = 10V.

©2008 Fairchild Semiconductor Corporation FDMS8674 Rev.C1

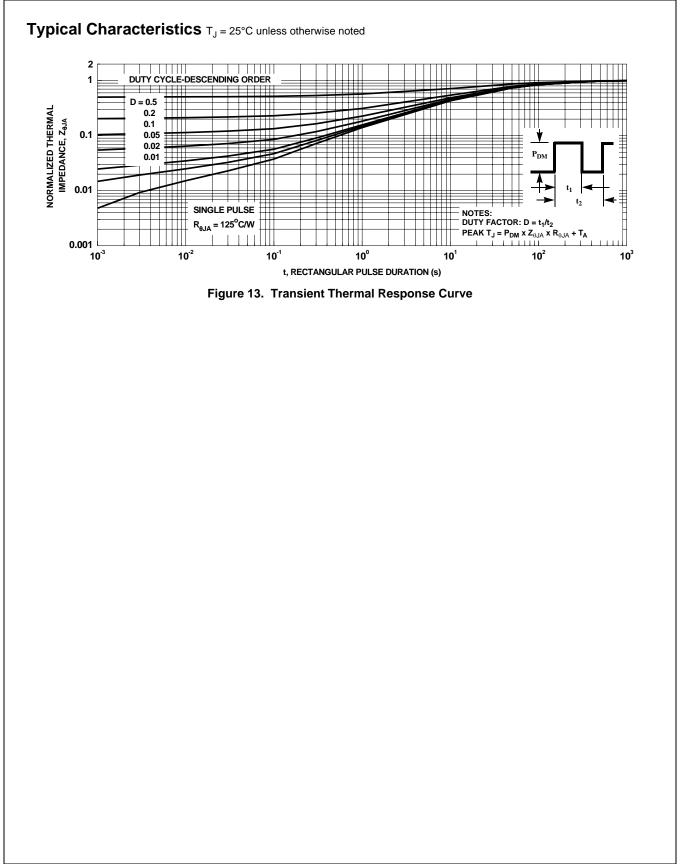


©2008 Fairchild Semiconductor Corporation FDMS8674 Rev.C1



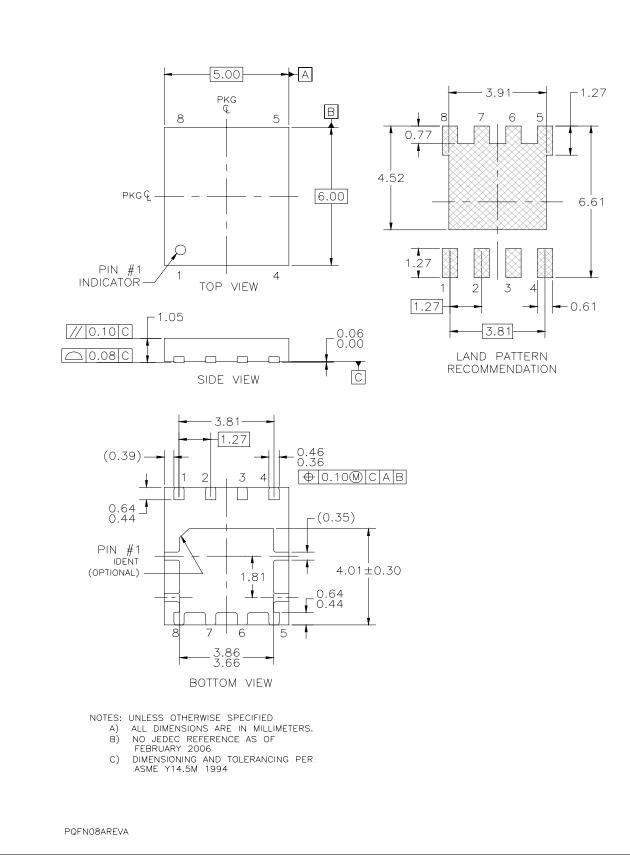


©2008 Fairchild Semiconductor Corporation FDMS8674 Rev.C1



FDMS8674 N-Channel PowerTrench[®] MOSFET

FDMS8674 N-Channel PowerTrench[®] MOSFET



©2008 Fairchild Semiconductor Corporation FDMS8674 Rev.C1



SEMICONDUCTOR

TRADEMARKS

The following includes registered and unregistered trademarks and service marks, owned by Fairchild Semiconductor and/or its global subsidianries, and is not intended to be an exhaustive list of all such trademarks.

PDP-SPM™

ACEx[®] Build it Now[™] CorePLUS[™] CorePOWER[™] *CROSSVOLT*[™] CTL[™] Current Transfer Logic[™] EcoSPARK[®] EfficentMax[™] EZSWITCH[™] *

Fairchild[®] Fairchild Semiconductor[®] FACT Quiet Series[™] FACT[®] FAST[®] FastvCore[™] FlashWriter[®] * F-PFS™ FRFET® Global Power ResourceSM Green FPS™ Green FPS[™] e-Series[™] GTO™ IntelliMAX™ **ISOPLANAR™** MegaBuck™ MICROCOUPLER™ MicroFET™ MicroPak™ MillerDrive™ MotionMax™ Motion-SPM™ OPTOLOGIC[®] **OPTOPLANAR[®]**

FPS™

Power-SPM™ PowerTrench[®] Programmable Active Droop™ **QFET**® QS™ Quiet Series™ RapidConfigure™ Saving our world 1mW at a time™ SmartMax™ SMART START™ SPM® STEALTH™ SuperFET™ SuperSOT[™]-3 SuperSOT™-6 SuperSOT™-8 SuperMOS™ GENERAL ®

The Power Franchise[®] puwer franchise TinyBoost™ TinyBuck™ TinyLogic® TINYOPTO™ TinyPower™ TinyPWM™ TinyWire™ µSerDes™ W UHC® Ultra FRFET™ UniFET™ VCX™ VisualMax™

* EZSWITCH™ and FlashWriter[®] are trademarks of System General Corporation, used under license by Fairchild Semiconductor.

DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION, OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS. THESE SPECIFICATIONS DO NOT EXPAND THE TERMS OF FAIRCHILD'S WORLDWIDE TERMS AND CONDITIONS, SPECIFICALLY THE WARRANTY THEREIN, WHICH COVERS THESE PRODUCTS.

LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF FAIRCHILD SEMICONDUCTOR CORPORATION.

As used herein:

- Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.
- 2. A critical component in any component of a life support, device, or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

PRODUCT STATUS DEFINITIONS Definition of Terms

Datasheet Identification	Product Status	Definition
Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	This datasheet contains preliminary data; supplementary data will be pub- lished at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design.
No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.
Obsolete	Not In Production	This datasheet contains specifications on a product that is discontinued by Fairchild Semiconductor. The datasheet is for reference information only.