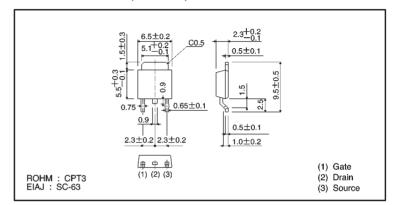
# Switching (500V, 2A) 25K2715

#### Features

- 1) Low on-resistance.
- 2) Fast switching speed.
- 3) Wide SOA (safe operating area).
- 4) Gate-source voltage (VGSS) guaranteed to be ±30V.
- 5) Easily designed drive circuits.
- 6) Easy to use in parallel.

# ●Structure Silicon N-channel MOSFET

# External dimensions (Units: mm)



# ●Absolute maximum ratings (Ta = 25°C)

Parameter		Symbol	Limits	Unit
Drain-source voltage		Voss	500	٧
Gate-source voltage		Vgss	±30	٧
Building	Continuous	ΙD	2	А
Drain current	Pulsed	IDP*	6	А
Reverse drain	Continuous	IDR	2	Α
current	Pulsed		6	Α
Total power dissipation	n(Tc=25℃)	Po	20	W
Channel temperature		Tch	150	င
Storage temperature		Tstg	<b>−55~</b> +150	င

<sup>\*</sup> Pw $\leq$ 10  $\mu$ s, Duty cycle $\leq$ 1%

## Packaging specifications

	Package	Taping
Type	Code	TL
	Basic ordering unit (pieces)	2500
2SK27	2SK2715	

Transistors 2SK2715

# ●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Тур.	Max.	Unit	Test Conditions
Gate-source leakage	lass	_	_	±100	nA	V <sub>GS</sub> =±30V, V <sub>DS</sub> =0V
Drain-source breakdown voltage	V(BR)DSS	500	_	_	٧	ID=1mA, VGS=0V
Zero gate voltage drain current	loss	_	_	100	μΑ	V <sub>DS</sub> =500V, V <sub>GS</sub> =0V
Gate threshold voltage	VGS(th)	2.0	_	4.0	٧	V <sub>DS</sub> =10V, I <sub>D</sub> =1mA
Static drain-source on-state resistance	RDS(on)	_	3.0	4.0	Ω	In=1A, Vgs=10V
Forward transfer admittance	Yfs	0.6	1.5	_	S	In=1A, Vns=10V
Input capacitance	Ciss	_	280	_	pF	V <sub>DS</sub> =10V
Output capacitance	Coss	_	58	_	pF	V <sub>GS</sub> =0V
Reverse transfer capacitance	Crss	_	23	_	pF	f=1MHz
Turn-on delay time	td(on)	_	10	_	ns	I <sub>D</sub> =1A, V <sub>DD</sub> ≒150V
Rise time	tr	_	12	_	ns	V <sub>GS</sub> =10V
Turn-off delay time	td(off)	_	30	_	ns	RL=150Ω
Fall time	tr	_	63	_	ns	R <sub>G</sub> =10Ω
Reverse recovery time	trr	_	410	_	ns	IDR=2A, VGS=0V
Reverse recovery charge	Qrr	_	1.7	_	μC	di/dt=100A/ μs

#### Electrical characteristic curves

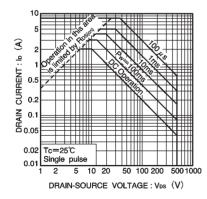


Fig.1 Maximum safe operating area

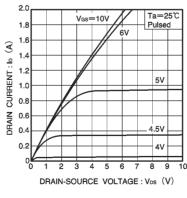


Fig.2 Typical output characteristics

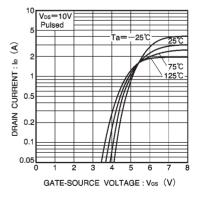


Fig.3 Typical transfer characteristics



Transistors 2SK2715

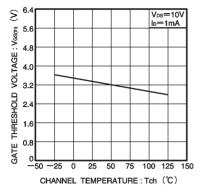


Fig.4 Gate threshold voltage vs. channel temperature

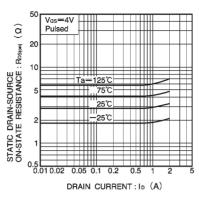


Fig.5 Static drain-source on-state resistance vs. drain current

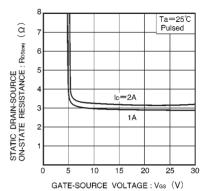


Fig.6 Static drain-source on-state resistance vs. gate-source voltage

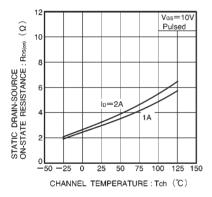


Fig.7 Static drain-source on-state resistance vs. channel temperature

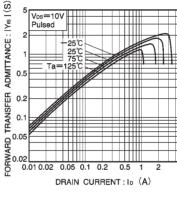


Fig.8 Forward transfer admittance vs. drain current

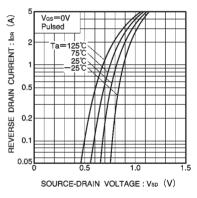


Fig.9 Reverse drain current vs. source-drain voltage (I)

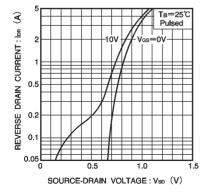


Fig.10 Reverse drain current vs. source-drain voltage (II)

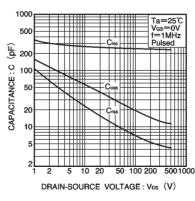


Fig.11 Typical capacitance vs. drain-source voltage

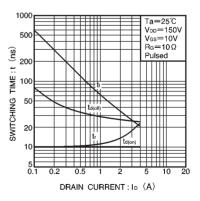


Fig.12 Switching characteristics (See Figures 16 and 17 for the measurement circuit and resultant waveforms)

Transistors 2SK2715

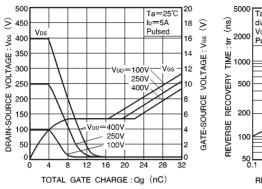


Fig.13 Dynamic input characteristics (See Figure 18 for measurement circuit)

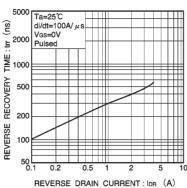


Fig.14 Reverse recovery time vs. reverse drain current

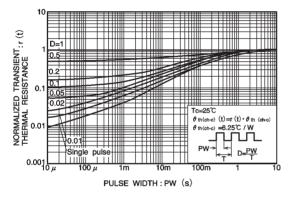
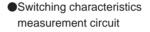


Fig.15 Normalized transient thermal resistance vs. pulse width



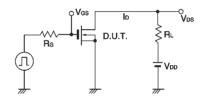


Fig.16 Switching time measurement circuit

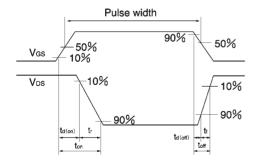


Fig.17 Switching time waveforms

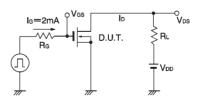


Fig.18 Gate charge measurement circuit

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