

KSC5039

High Voltage Power Switch Switching Application



1.Base 2.Collector 3.Emitter

NPN Silicon Transistor

Absolute Maximum Ratings $T_C=25^{\circ}C$ unless otherwise noted

Symbol	Parameter	Value	Units
V _{CBO}	Collector-Base Voltage	800	V
V _{CEO}	Collector-Emitter Voltage	400	V
V _{EBO}	Emitter-Base Voltage	7	V
I _C	Collector Current (DC)	5	Α
I _{CP}	Collector Current (Pulse)	10	Α
I _B	Base Current	3	Α
P _C	Collector Dissipation (T _C =25°C)	70	W
TJ	Junction Temperature	150	°C
T _{STG}	Storage Temperature	- 65 ~ 150	°C

Electrical Characteristics $T_C=25$ °C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Тур.	Max.	Units
BV _{CBO}	Collector-Base Breakdown Voltage	$I_{C} = 1 \text{mA}, I_{E} = 0$	800			V
BV _{CEO}	Collector-Emitter Breakdown Voltage	$I_C = 5mA, I_B = 0$	400			V
BV _{EBO}	Emitter-Base Breakdown Voltage	$I_C = 1mA, I_C=0$	7			
I _{CBO}	Collector Cut-off Current	$V_{CB} = 500V, I_{E} = 0$			10	μΑ
I _{EBO}	Emitter Cut-off Current	$V_{EB} = 7V, I_{C} = 0$			10	μΑ
h _{FE}	* DC Current Gain	$V_{CE} = 5V, I_{C} = 0.3A$	10			
V _{CE} (sat)	* Collector-Emitter Saturation Voltage	$I_C = 2.5A, I_B = 0.5A$			1.5	V
V _{BE} (sat)	* Base-Emitter Saturation Voltage	$I_C = 2.5A, I_B = 0.5A$			2.0	V
f _T	Current Gain Bandwidth Product	$V_{CE} = 5V, I_{C} = 0.1A$		10		MHz
C _{ob}	Output Capacitance	V _{CB} = 10V , f = 1MHz		40		pF
t _{ON}	Turn ON Time	$V_{CC} = 150V, I_{C} = 2.5A$			1	μs
t _{STG}	Storage Time	$I_{B1} = -I_{B2} = 0.5A$			3	μs
t _F	Fall Time	$R_L = 60\Omega$			0.8	μs

^{*} Plus test: PW=300µs, Duty Cycle=2% Pulsed

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Typical Characteristics

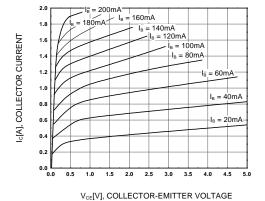


Figure 1. Static Characteristic

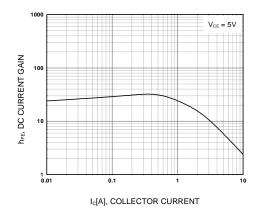


Figure 2. DC current Gain

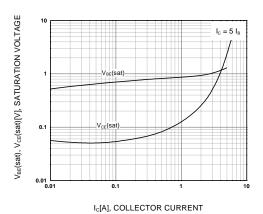


Figure 3. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

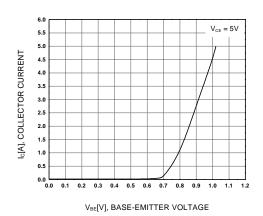


Figure 4. Base-Emitte On Voltage

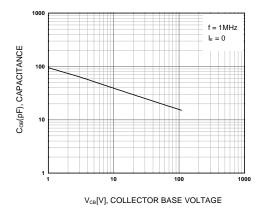


Figure 5. Collector Output Capacitance

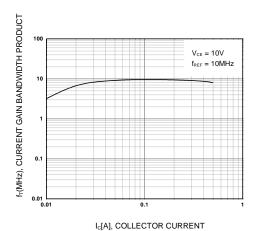


Figure 6. Current Gain Bandwidth Product

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Typical Characteristics (Continued)

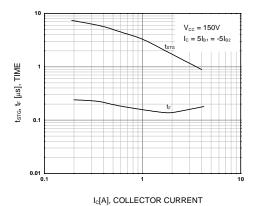


Figure 7. Switching Time

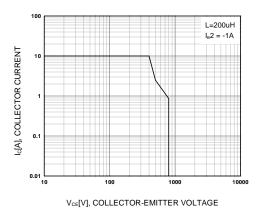


Figure 9. Reverse Bias Safe Operaing Area

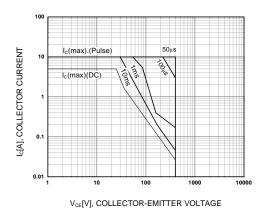


Figure 8. Safe Operating Area

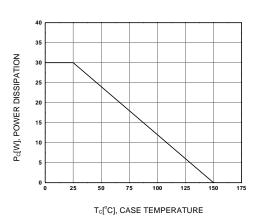
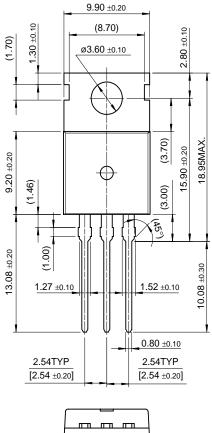


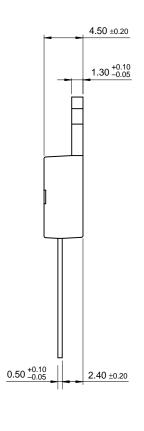
Figure 10. Power Derating

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Package Demensions

TO-220





10.00 ±0.20

Dimensions in Millimeters

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