

## KSC2752

# **High Speed High Voltage Swiching Industrial Use**



# **NPN Epitaxial Silicon Transistor**

1. Emitter 2.Collector 3.Base

### Absolute Maximum Ratings T<sub>C</sub>=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V <sub>CBO</sub>	Collector-Base Voltage	500	V
V <sub>CEO</sub>	Collector-Emitter Voltage	400	V
V <sub>EBO</sub>	Emitter-Base Voltage	7	V
I <sub>C</sub>	Collector Current (DC)	0.5	А
I <sub>CP</sub>	*Collector Current (Pulse)	1	А
I <sub>B</sub>	Base Current (DC)	0.25	А
P <sub>C</sub>	Collector Dissipation (T <sub>a</sub> =25°C)	1	W
P <sub>C</sub>	Collector Dissipation (T <sub>C</sub> =25°C)	10	W
TJ	Junction Temperature	150	°C
T <sub>STG</sub>	Storage Temperature	- 55 ~ 150	°C

<sup>\*</sup> PW≤300μs, Duty Cycle≤10%

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

Symbol	Parameter	Test Condition	Min.	Max.	Units
V <sub>CEO</sub> (sus)	Collector-Emitter Sustaining Voltage	$I_C = 0.3A$ , $I_{B1} = 0.06A$ , $L = 10mH$	400		V
V <sub>CEX</sub> (sus)1	Collector-Emitter Sustaining Voltage	$I_C = 0.3A$ , $I_{B1} = -I_{B2} = 0.06A$ $V_{BE}(off) = -5V$ , L =10mH, Clamped	450		V
V <sub>CEX</sub> (sus)2	Collector-Emitter Sustaining Voltage	$I_C = 0.6A$ , $I_{B1} = 0.2A$ , $I_{B2} = -0.06A$ $V_{BE}(off) = -5V$ , $L = 10mH$ , Clamped	400		V
I <sub>CBO</sub>	Collector Cut-off Current	$V_{CB} = 400V, I_{E} = 0$		10	μΑ
I <sub>CER</sub>	Collector Cut-off Current	$V_{CE} = 400V, R_{BE} = 51\Omega, T_{C} = 125^{\circ}C$		1	mA
I <sub>CEX1</sub>	Collector Cut-off Current	$V_{CE} = 400V, R_{BE}(off) = -1.5V$		10	μΑ
I <sub>CEX2</sub>	Collector Cut-off Current	$V_{CE} = 400V, R_{BE}(off) = -1.5V$ @ $T_{C} = 125^{\circ}C$		1	mA
I <sub>EBO</sub>	Emitter Cut-off Current	$V_{EB} = 5V, I_{C} = 0$		10	μΑ
h <sub>FE1</sub> h <sub>FE2</sub>	* DC Current Gain	$V_{CE} = 5V, I_{C} = 0.05A$ $V_{CE} = 5V, I_{C} = 0.3A$	20 10	80	
V <sub>CE</sub> (sat)	* Collector-Emitter Saturation Voltage	$I_C = 0.3A, I_B = 0.06A$		1	V
V <sub>BE</sub> (sat)	* Base-Emitter Saturation Voltage	$I_C = 0.3A, I_B = 0.06A$		2	V
t <sub>ON</sub>	Turn ON Time	$V_{CC} = 150V, I_{C} = 0.3A$		1	μs
t <sub>STG</sub>	Storage Time	$I_{B1} = -I_{B2} = 0.06A, R_L = 500\Omega$		2.5	μs
t <sub>F</sub>	Fall Time	PW = 50μs, Duty Cycle≤2%		1	μs

<sup>\*</sup> Pulse Test: PW≤350μs, Duty Cycle≤2% Pulsed

# **h**<sub>FE</sub> Classification

Classification	R	0	Y
h <sub>FE1</sub>	20 ~ 40	30 ~ 60	40 ~ 80

# **Typical Characteristics**

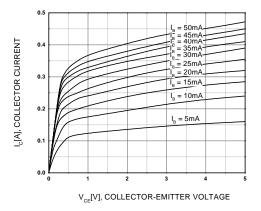


Figure 1. Static Characteristic

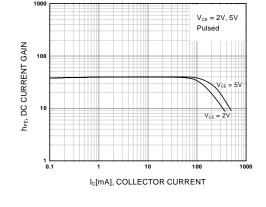


Figure 2. DC current Gain

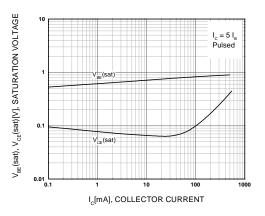


Figure 3. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

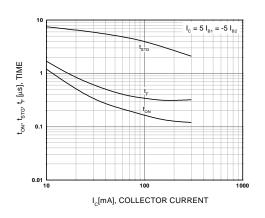


Figure 4. Switching Time

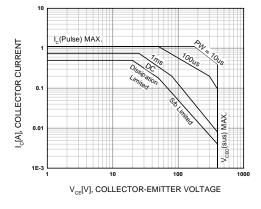


Figure 5. Safe Operating Area

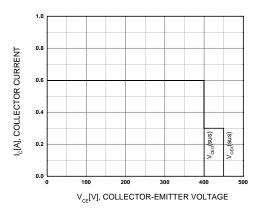
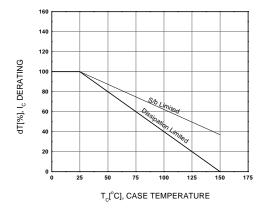


Figure 6. Reverse Bias Safe Operating Area

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# Typical Characteristics (Continued)



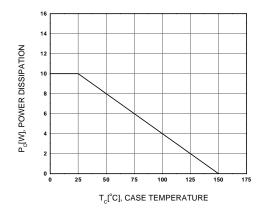


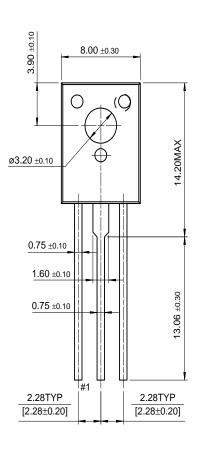
Figure 7. Derating Curve of Safe Operating Area

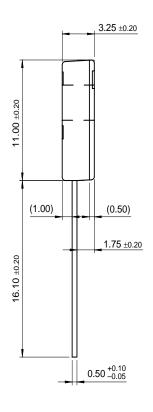
Figure 8. Power Derating

# Package Demensions

# KSC2752

TO-126





Dimensions in Millimeters

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