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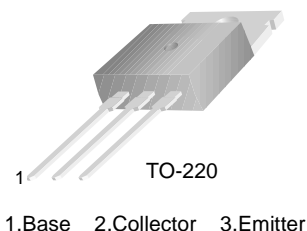# KSC5367

High Voltage and High Reliability

- High speed Switching
- Wide Safe Operating Area
- High Collector Base Voltage

TO-220

1.Base   2.Collector   3.Emitter

NPN Triple Diffused Planar Silicon Transistor

Absolute Maximum Ratings T_C=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	1600	V
V_{CEO}	Collector-Emitter Voltage	800	V
V_{EBO}	Emitter-Base Voltage	12	V
I_C	Collector Current (DC)	3	A
I_{CP}	*Collector Current (Pulse)	6	A
I_B	Base Current	2	A
I_{BP}	*Base Current (Pulse)	4	A
P_C	Power Dissipation(Tc=25)	80	W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	- 65 ~ 150	°C

* Pulse Test: Pulse Width=5ms, Duty Cycle≤10%

Thermal Characteristics T_C=25°C unless otherwise noted

Symbol	Characteristics		Rating	Unit
$R_{\theta jc}$	Thermal Resistance	Junction to Case	1.56	°C/W
$R_{\theta ja}$		Junction to Ambient	62.5	

Electrical Characteristics T_C=25°C unless otherwise noted

| Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
BV_{CBO}	Collector-Base Breakdown Voltage	$I_C = 1mA$, $I_E = 0$	1600	-	-	V
BV_{CEO}	Collector-Emitter Breakdown Voltage	$I_C = 5mA$, $I_B = 0$	800	-	-	V
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_C =0.5mA$, $I_C = 0$	12	-	-	V
I_{CBO}	Collector Cut-off Current	$V_{CB} = 1,600V$, $I_E = 0$	-	-	20	μA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 12V$, $I_C = 0$	-	-	20	μA
h_{FE1} h_{FE2}	DC Current Gain	$V_{CE} = 3V$, $I_C = 0.4A$ $V_{CE} = 10V$, $I_C = 5mA$	12 8	- -	35 -	
$V_{CE}(sat)$	Collector-Emitter Saturation Voltage	$I_C = 250mA$, $I_B = 25mA$ $I_C = 500mA$, $I_B = 50mA$ $I_C = 1A$, $I_B= 0.2A$	- - -	- - -	2.5 4.5 2.5	V V V
$V_{BE}(sat)$	Base-Emitter Saturation Voltage	$I_C = 3A$, $I_B = 0.6A$	-	-	1.5	V
C_{ob}	Output Capacitance	$I_C = 500mA$, $I_B = 50mA$	-	40		pF
t_{ON}	Turn ON Time	$V_{CC} = 125V$, $I_C = 0.5A$ $I_{B1} = 42mA$, $I_{B2} = -333mA$ $R_L = 250Ω$	-	-	0.5	μs
t_{STG}	Storage Time			-	2.2	μs
t_F	Fall Time		-	-	0.5	μs
t_{ON}	Turn ON Time	$V_{CC} = 250V$, $I_C = 1A$ $I_{B1} = 0.2A$, $I_{B2} = -0.4A$ $R_L = 250Ω$	-	-	0.5	μs
t_{STG}	Storage Time		-	-	4.0	μs
t_F	Fall Time		-	-	0.5	μs

Typical Characteristics
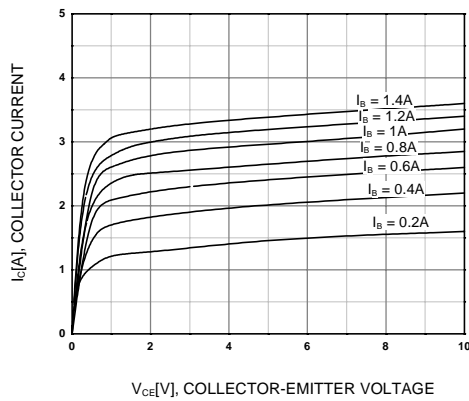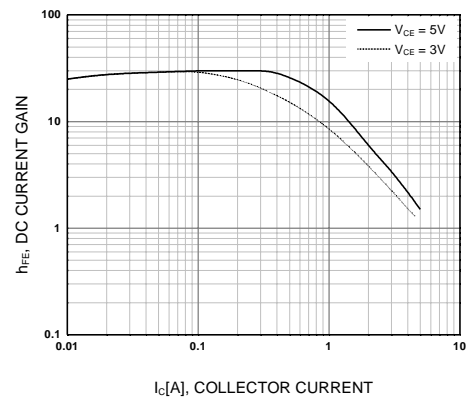

Figure 1. Static Characteristic

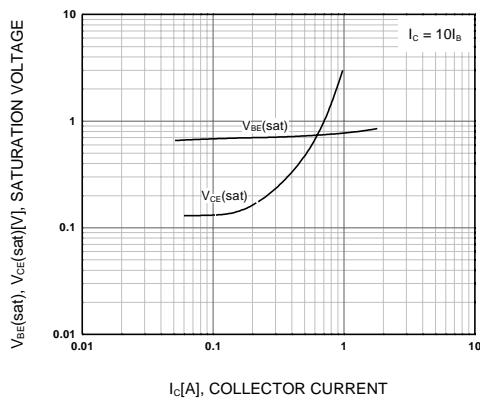**Figure 2. DC current Gain**

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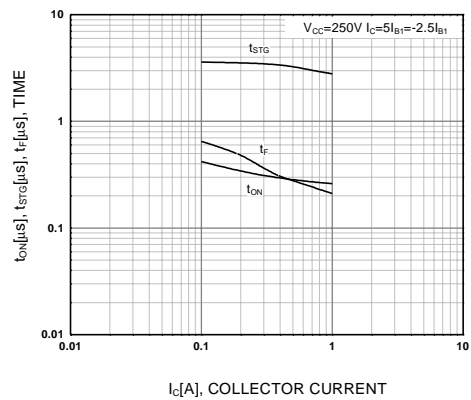**Collector-Emitter Saturation Voltage**

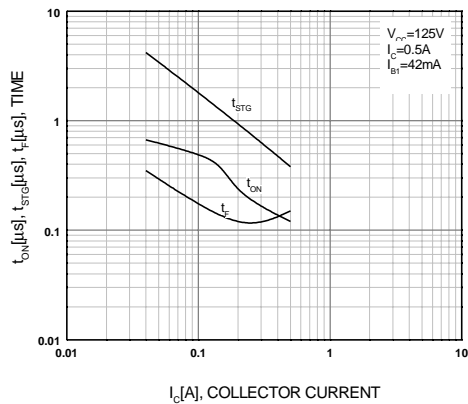**Figure 4. Switching Time**
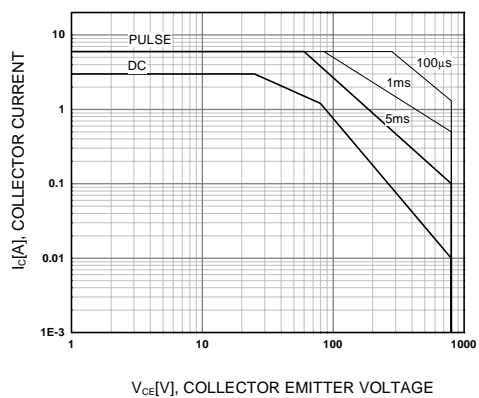

Figure 5. Switching Time

Figure 6. Safe Operating Area

Typical Characteristics (Continued)
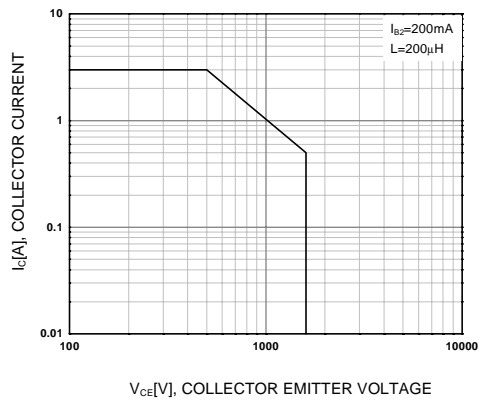
Figure 7. Reverse Bias Safe Operating Area
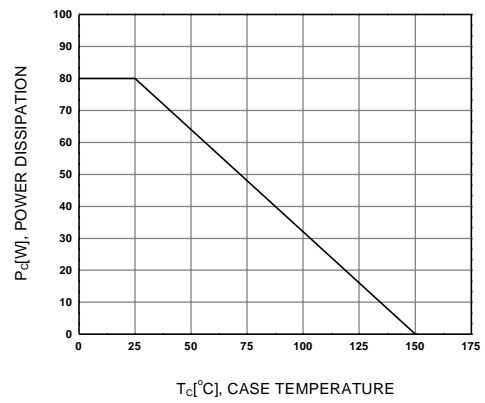
Figure 8. Power Derating

Package Demensions

TO-220

9.90 ±0.20

(8.70)

(1.70)

1.30 ±0.10

ø3.60 ±0.10

2.80 +0.10

9.20 ±0.20

(1.46)

(3.70)

15.90 ±0.20

18.95MAX.

(3.00)

13.08 ±0.20

(1.00)

(45°)

1.27 ±0.10

1.52 ±0.10

10.08 ±0.30

0.80 ±0.10

2.54TYP

[2.54 ±0.20]

2.54TYP

[2.54 ±0.20]

10.00 ±0.20

4.50 ±0.20

1.30 +0.10 −0.05

0.50 +0.10 −0.05

2.40 ±0.20
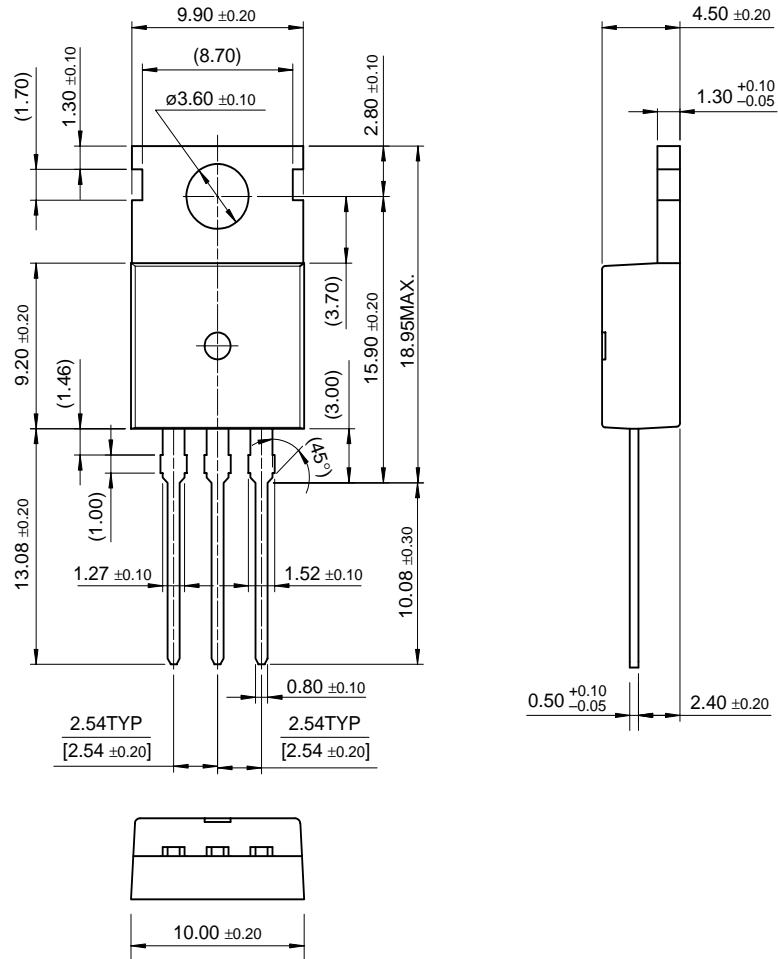
Dimensions in Millimeters

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