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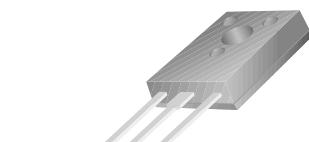
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**KSC2752**

**KSC2752**

## High Speed High Voltage Swiching Industrial Use



TO-126  
1. Emitter 2. Collector 3. Base

### NPN Epitaxial Silicon Transistor

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

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	500	V
$V_{CEO}$	Collector-Emitter Voltage	400	V
$V_{EBO}$	Emitter-Base Voltage	7	V
$I_C$	Collector Current (DC)	0.5	A
$I_{CP}$	*Collector Current (Pulse)	1	A
$I_B$	Base Current (DC)	0.25	A
$P_C$	Collector Dissipation ( $T_a=25^\circ\text{C}$ )	1	W
$P_C$	Collector Dissipation ( $T_C=25^\circ\text{C}$ )	10	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	- 55 ~ 150	$^\circ\text{C}$

\* PW≤300μs, Duty Cycle≤10%

### Electrical Characteristics $T_C=25^\circ\text{C}$ unless otherwise noted

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

\* Pulse Test: PW≤350μs, Duty Cycle≤2% Pulsed

### $h_{FE}$ Classification

Classification	R	O	Y
$h_{FE1}$	20 ~ 40	30 ~ 60	40 ~ 80

## Typical Characteristics

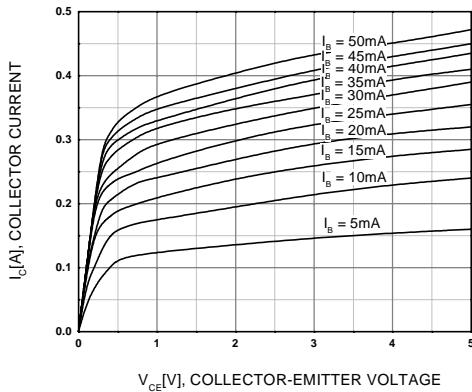


Figure 1. Static Characteristic

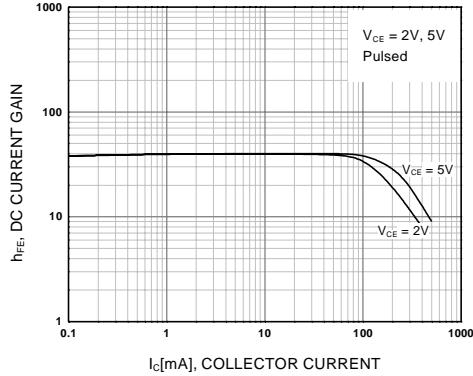


Figure 2. DC current Gain

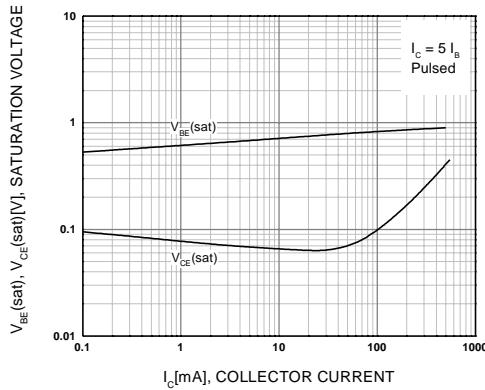


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

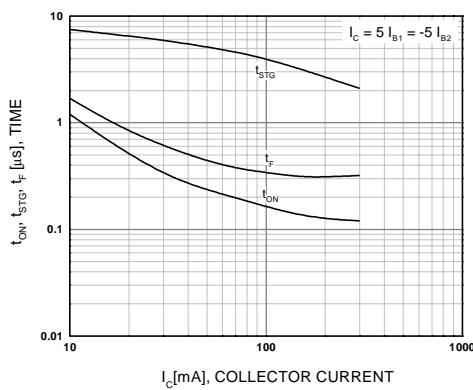


Figure 4. Switching Time

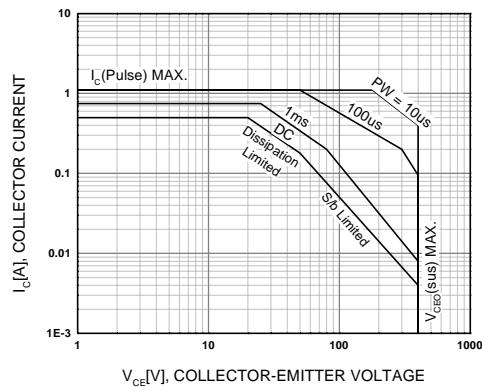


Figure 5. Safe Operating Area

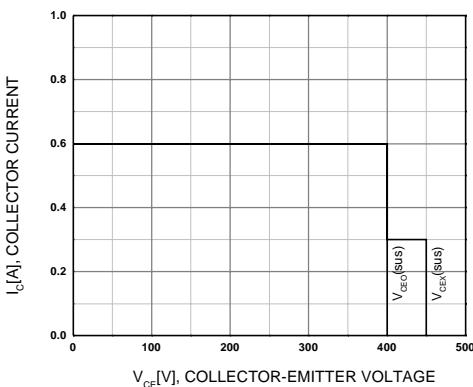


Figure 6. Reverse Bias Safe Operating Area

## Typical Characteristics (Continued)

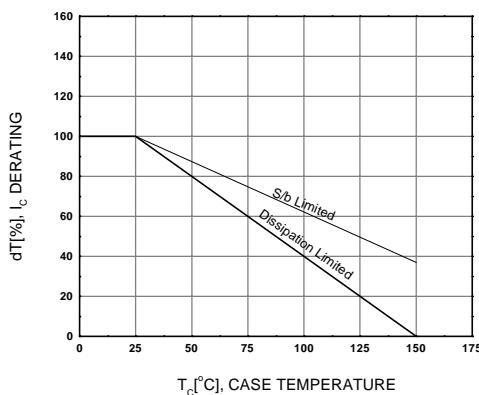


Figure 7. Derating Curve of Safe Operating Area

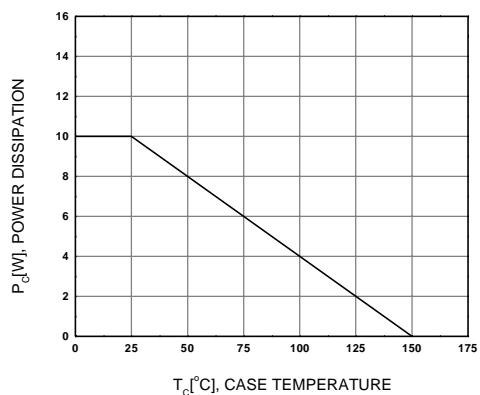
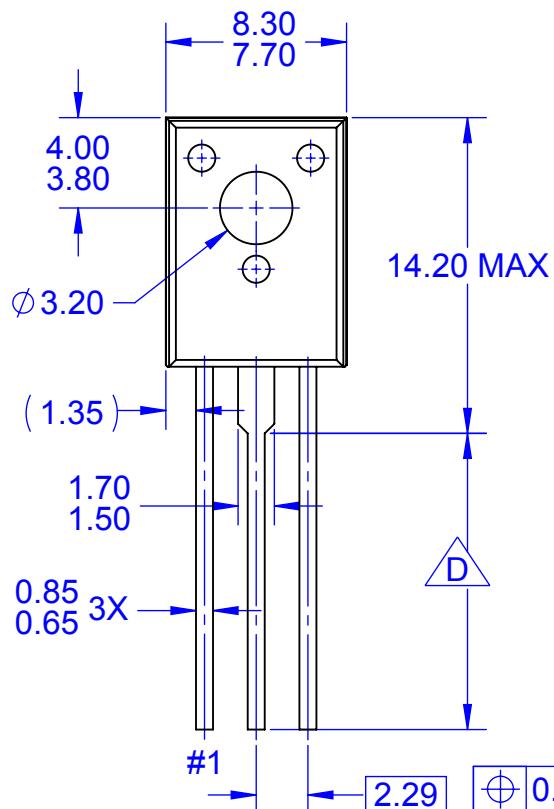
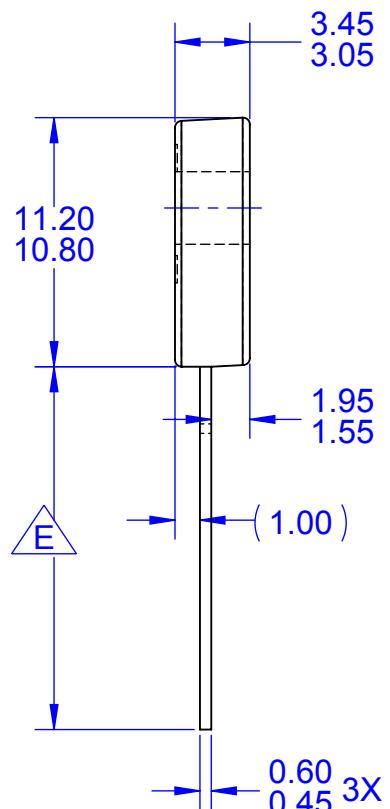


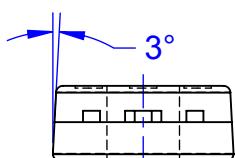
Figure 8. Power Derating



## TOP VIEW



## SIDE VIEW



## FRONT VIEW

PRODUCTION CODE	TERMINAL LENGTH "D"	TERMINAL LENGTH "E"
TSSTU	3.45 - 4.05	6.45-7.45
TSTU	2.36 - 2.96	5.36-6.36
NONE (STD LENGTH)	12.76 - 13.36	15.76-16.76

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- B. ALL DIMENSIONS ARE IN MILLIMETERS
- C. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH, AND TIE BAR PROTRUSIONS

 FOR TERMINAL LENGTH "D", REFER TO TABLE

 FOR TERMINAL LENGTH "E", REFER TO TABLE F. DRAWING FILENAME: MKT-TO126AArev2

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