

## Features

- Designed for General Purpose Amplifier and Low Speed Switching Applications
- Halogen Free. "Green" Device<sup>(Note 1)</sup>
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

## Maximum Ratings @ 25°C Unless Otherwise Specified

- Operating Junction Temperature Range: -65°C to +150°C
- Storage Temperature Range: -65°C to +150°C
- Thermal Resistance: 9°C/W Junction to Case
- Thermal Resistance: 100°C/W Junction to Ambient<sup>(Note2)</sup>

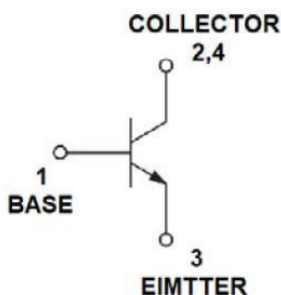
Parameter	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	100	V
Collector-Emitter Voltage	$V_{CEO}$	100	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Continuous Collector Current	$I_C$	3	A
Power Dissipation @ $T_A=25^\circ\text{C}$	$P_D$	1.25	W
Power Dissipation @ $T_C=25^\circ\text{C}$	$P_D$	15	W

Note:

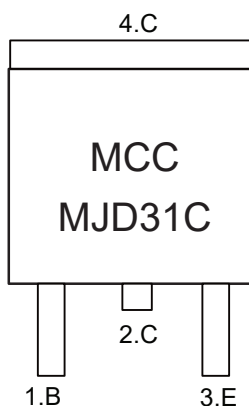
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

2. Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, tin-plated mounting pad for collector 1 cm<sup>2</sup>.

### Internal Structure

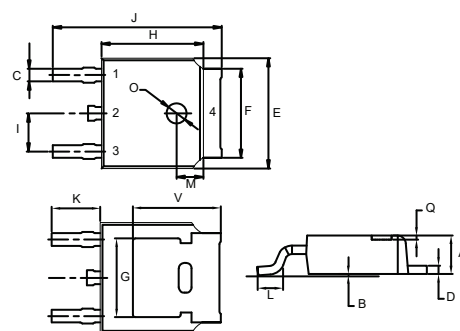


### Device Marking



# Silicon NPN epitaxial planer Transistors

## DPAK(TO-252)



1.BASE  
2,4.COLLECTOR  
3.EMITTER

### DIMENSIONS

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.087	0.094	2.20	2.40	
B	0.000	0.005	0.00	0.13	
C	0.026	0.034	0.66	0.86	
D	0.018	0.023	0.46	0.58	
E	0.256	0.264	6.50	6.70	
F	0.201	0.215	5.10	5.46	
G	0.190		4.83		TYP.
H	0.236	0.244	6.00	6.20	
I	0.086	0.094	2.18	2.39	
J	0.386	0.409	9.80	10.40	
K	0.114		2.90		TYP.
L	0.055	0.067	1.40	1.70	
M	0.063		1.60		TYP.
O	0.043	0.051	1.10	1.30	
Q	0.000	0.012	0.00	0.30	
V	0.211		5.35		TYP.

**Electrical Characteristics @  $T_A=25^\circ\text{C}$  Unless Otherwise Specified**

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	100			V	$I_C=1\text{mA}, I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	100			V	$I_C=30\text{mA}, I_B=0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5			V	$I_E=1\text{mA}, I_C=0$
Collector Cutoff Current	$I_{CEO}$			50	$\mu\text{A}$	$V_{CE}=60\text{V}, I_B=0$
Collector Cutoff Current	$I_{CES}$			20	$\mu\text{A}$	$V_{CE}=100\text{V}, V_{EB}=0$
Emitter Cutoff Current	$I_{EBO}$			1	mA	$V_{EB}=5\text{V}, I_C=0$
DC Current Gain	$h_{FE(1)}$	25				$V_{CE}=4\text{V}, I_C=1\text{A}$
	$h_{FE(2)}$	10		75		$V_{CE}=4\text{V}, I_C=3\text{A}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			1.2	V	$I_C=3\text{A}, I_B=0.375\text{A}$
Base-Emitter Voltage	$V_{BE}$			1.8	V	$I_C=3\text{A}, V_{CE}=4\text{V}$
Transition Frequency	$f_T$	3			MHz	$V_{CE}=10\text{V}, I_C=0.5\text{A}, f=1\text{KHz}$

**Curve Characteristics**

Fig. 1 - Static Characteristics

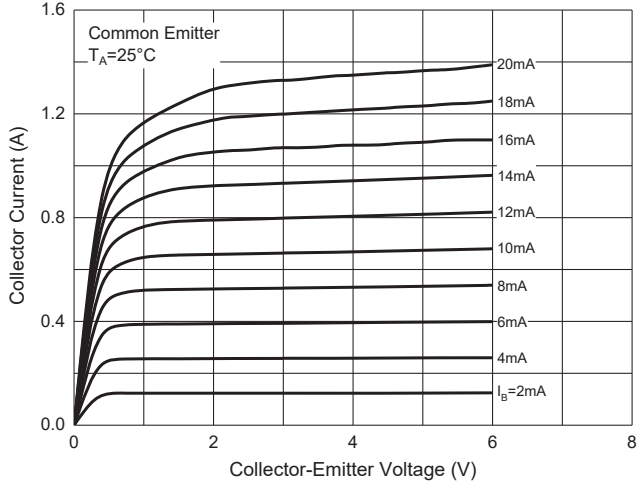


Fig. 2 - DC Current Gain Characteristics

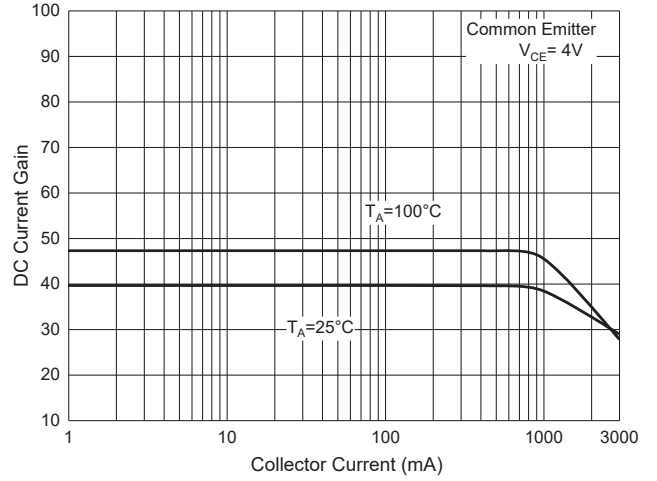


Fig. 3 - Base-Emitter Saturation Voltage Characteristics

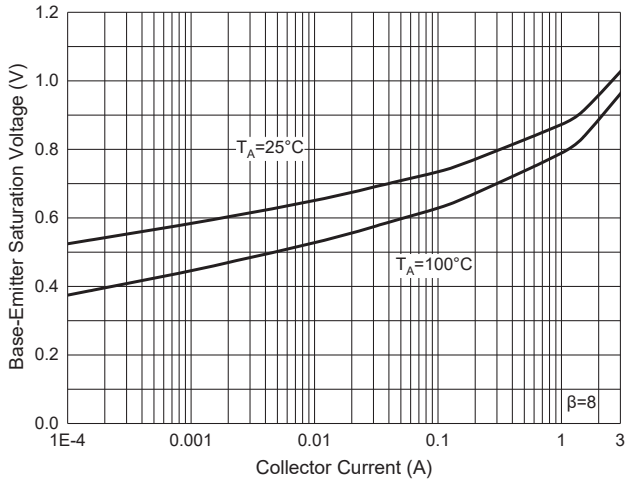


Fig. 4 - Collector-Emitter Saturation Voltage Characteristics

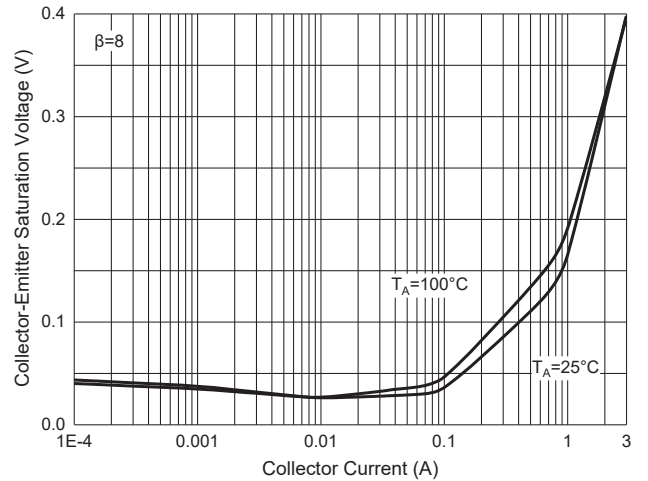


Fig. 5 - Base-Emitter Voltage Characteristics

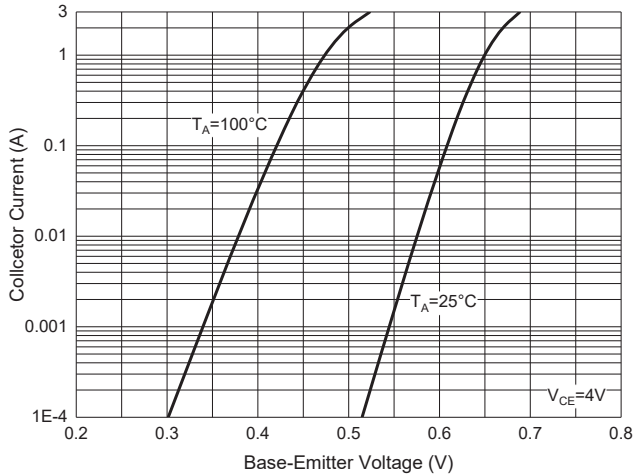
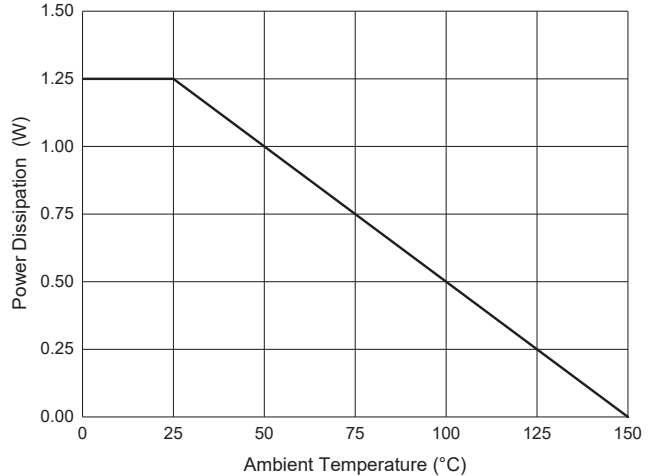


Fig. 6 - Power Derating Curve



Curve Characteristics

Fig. 7 - Power Derating Curve

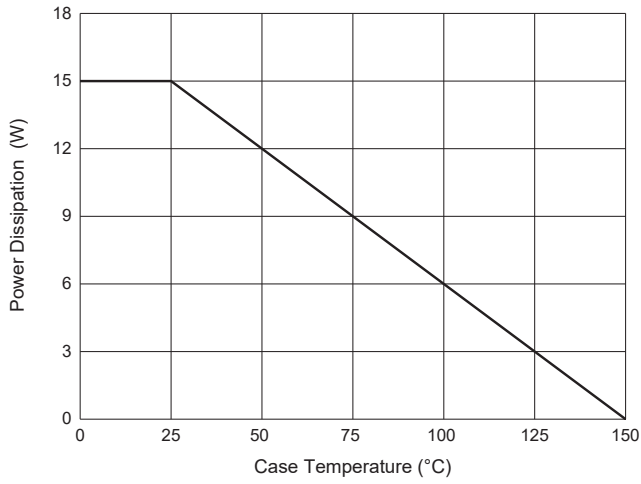
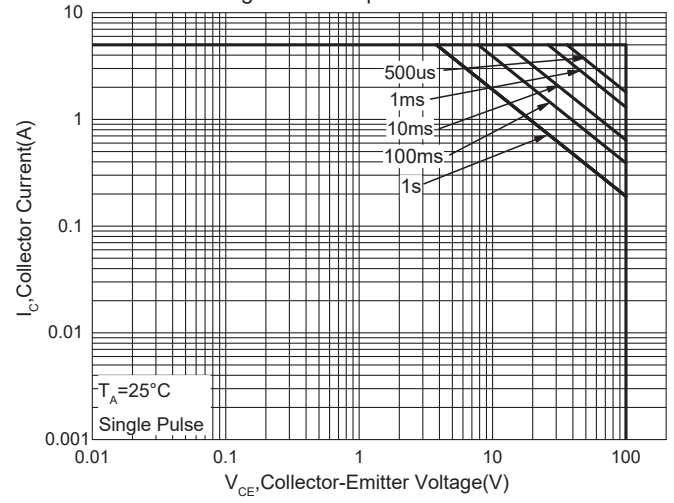


Fig. 8 - Safe Operation Area



## Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 2.5Kpcs/Reel

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