

Features

- Ideally Suited for Automatic Insertion
- Low Current, Low Voltage
- Epitaxial Planar Die Construction
- Halogen Free. "Green" Device (Note 1)
- 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: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 285°C/W Junction to Ambient^(Note 2)
- Thermal Resistance: 215°C/W Junction to Soldering Point

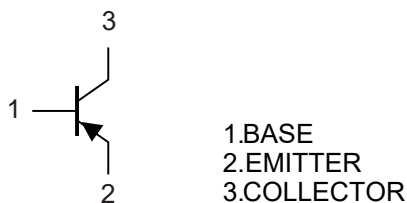
Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	-60	V
Collector-Emitter Voltage	V_{CEO}	-45	V
Emitter-Base Voltage	V_{EBO}	-5	V
Continuous Collector Current	I_C	-800	mA
Peak Collector Current	I_{CM}	-1000	mA
Continuous Base Current	I_B	-100	mA
Peak Base Current	I_{BM}	-200	mA
Power Dissipation	$T_S=79^\circ\text{C}$ P_D	330	mW

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. Valid Provided that Leads are Kept at Ambient Temperature.

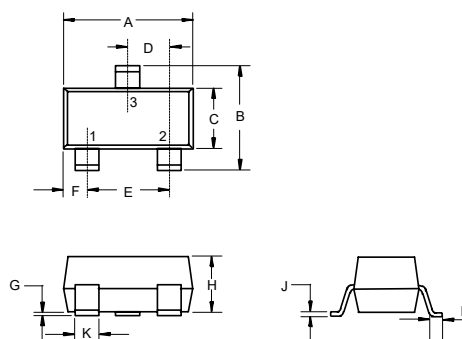
Marking: DG

Internal Structure



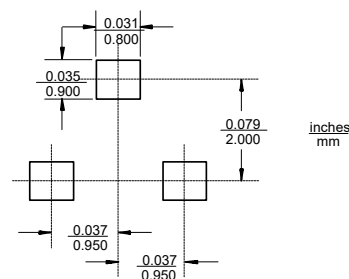
PNP Small Signal Transistor

SOT-23



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.110	0.120	2.80	3.04	
B	0.083	0.104	2.10	2.64	
C	0.047	0.055	1.20	1.40	
D	0.034	0.041	0.85	1.05	
E	0.067	0.083	1.70	2.10	
F	0.018	0.024	0.45	0.60	
G	0.0004	0.006	0.01	0.15	
H	0.035	0.043	0.90	1.10	
J	0.003	0.007	0.08	0.18	
K	0.012	0.020	0.30	0.51	
L	0.007	0.020	0.20	0.50	

Suggested Solder Pad Layout



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

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-60			V	$I_C=-10\mu\text{A}$, $I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-45			V	$I_C=-10\text{mA}$, $I_B=0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5			V	$I_E=-10\mu\text{A}$, $I_C=0$
Collector-Base Cutoff Current	I_{CBO}			-20	nA	$V_{CB}=-45\text{V}$, $I_E=0$
				-20	μA	$V_{CB}=-45\text{V}$, $I_E=0$, $T_A=150^\circ\text{C}$
Emitter-Base Cutoff Current	I_{EBO}			-20	nA	$V_{EB}=-4\text{V}$, $I_C=0$
DC Current Gain	$h_{FE(1)}$	50				$V_{CE}=-10\text{V}$, $I_C=-100\mu\text{A}$
	$h_{FE(2)}$	120				$V_{CE}=-1\text{V}$, $I_C=-10\text{mA}$
	$h_{FE(3)}$	160	250	400		$V_{CE}=-1\text{V}$, $I_C=-100\text{mA}$
	$h_{FE(4)}$	60				$V_{CE}=-2\text{V}$, $I_C=-500\text{mA}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			-0.3	V	$I_C=-100\text{mA}$, $I_B=-10\text{mA}$
				-0.7	V	$I_C=-500\text{mA}$, $I_B=-50\text{mA}$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$			-1.25	V	$I_C=-100\text{mA}$, $I_B=-10\text{mA}$
				-2.0	V	$I_C=-500\text{mA}$, $I_B=-50\text{mA}$
Transition Frequency	f_T		200		MHz	$V_{CE}=-5\text{V}$, $I_C=-50\text{mA}$, $f=100\text{MHz}$
Collector-Base Capacitance	C_{CB}		6		pF	$V_{CB}=-10\text{V}$, $f=1\text{MHz}$
Emitter-Base Capacitance	C_{EB}		60		pF	$V_{EB}=-0.5\text{V}$, $f=1\text{MHz}$

Curve Characteristics

Fig. 1 - Static Characteristics

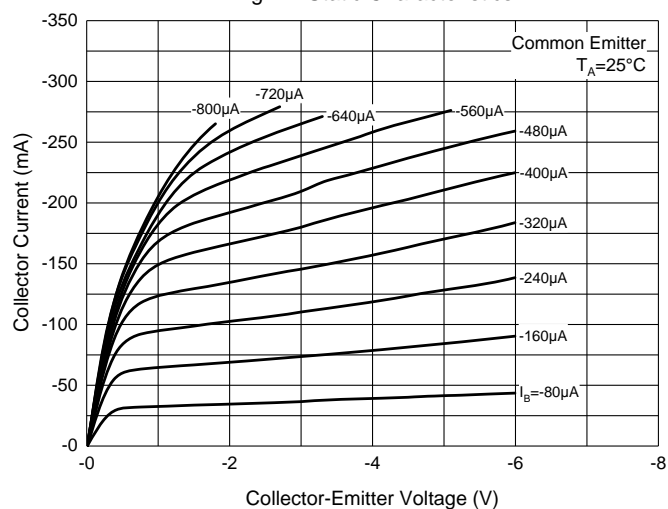


Fig. 2 - DC Current Gain Characteristics

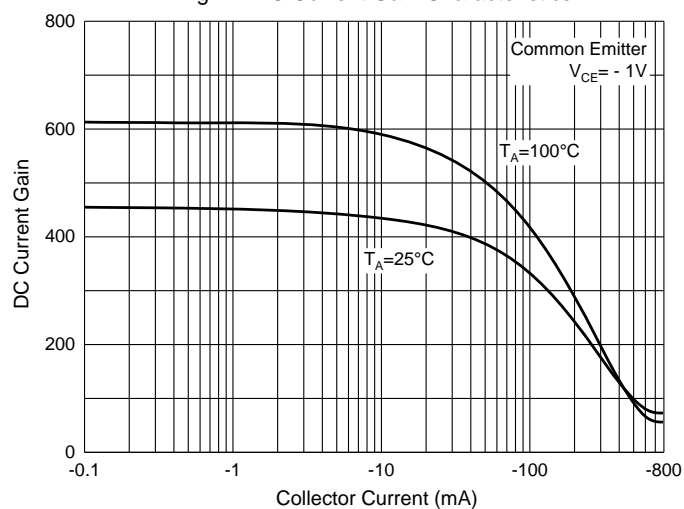


Fig. 3 - Base-Emitter Saturation Voltage Characteristics

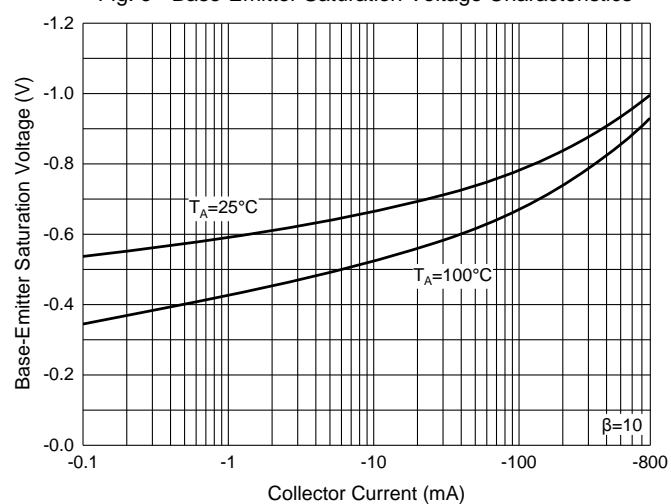


Fig. 4 - Collector-Emitter Saturation Voltage Characteristics

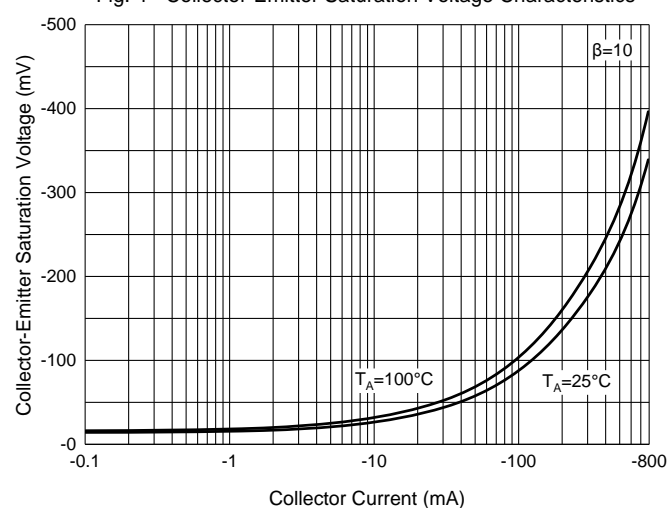
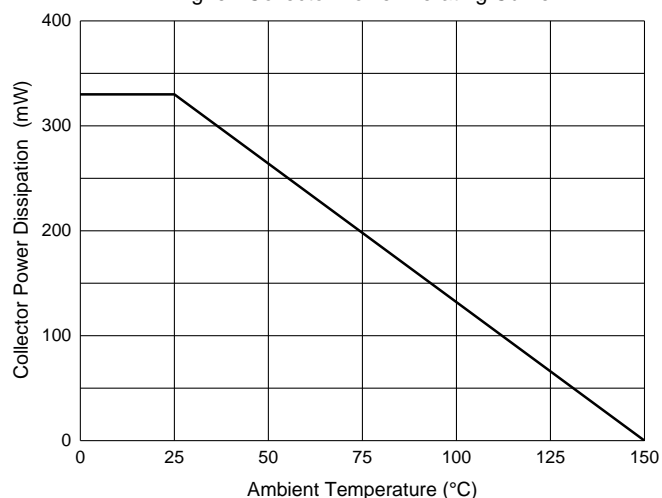


Fig. 5 - Collector Power Derating Curve



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

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