

Features

- 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

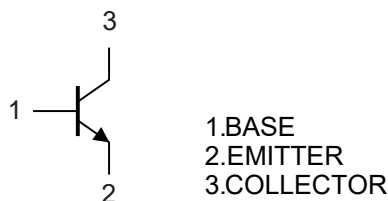
- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 357°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6	V
Continuous Collector Current	I_C	600	mA
Power Dissipation	P_D	350	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.

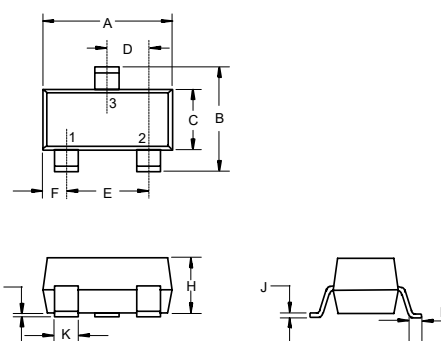
Marking: 2X

Internal Structure



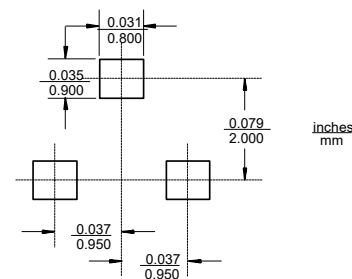
NPN General Purpose Amplifier

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°C Unless Otherwise Specified

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	V _{(BR)CBO}	60			V	I _C =10mA, I _E =0
Collector-Emitter Breakdown Voltage ⁽²⁾	V _{(BR)CEO}	40			V	I _C =1mA, I _B =0
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	6			V	I _E =100μA, I _C =0
Base Cutoff Current	I _{BL}			0.1	μA	V _{CE} =35V, V _{BE} =0.4V
Collector Cutoff Current	I _{CEX}			0.1	μA	V _{CE} =35V, V _{BE} =0.4V
DC Current Gain ⁽²⁾	h _{FE(1)}	20				V _{CE} =1V, I _C =0.1mA
	h _{FE(2)}	40				V _{CE} =1V, I _C =1mA
	h _{FE(3)}	80				V _{CE} =1V, I _C =10mA
	h _{FE(4)}	100		300		V _{CE} =1V, I _C =150mA
	h _{FE(5)}	40				V _{CE} =1V, I _C =500mA
Collector-Emitter Saturation Voltage	V _{CE(sat)}			0.4	V	I _C =150mA, I _B =15mA
				0.75	V	I _C =500mA, I _B =50mA
Base-Emitter Saturation Voltage	V _{BE(sat)}		0.75	0.95	V	I _C =150mA, I _B =15mA
				1.2	V	I _C =500mA, I _B =50mA
Transition Frequency	f _T	250			MHz	V _{CE} =10V, I _C =20mA, f=100MHz
Delay Time	t _d			15	ns	V _{CC} =30V, V _{BE} =0.2V, I _C =150mA, I _{B1} =15mA
Rise Time	t _r			20	ns	
Storage Time	t _s			225	ns	V _{CC} =30V, I _C =150mA, I _{B1} =I _{B2} =15mA
Fall Time	t _f			30	ns	
Collector-Base Capacitance	C _{cb}			6.5	pF	V _{CB} =5V, I _E =0, f=1MHz
Emitter-Base Capacitance	C _{eb}			30	pF	V _{EB} =0.5V, I _C =0, f=1MHz

Note: 2. Pulse test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2.0%.

Curve Characteristics

Fig. 1 - Static Characteristics

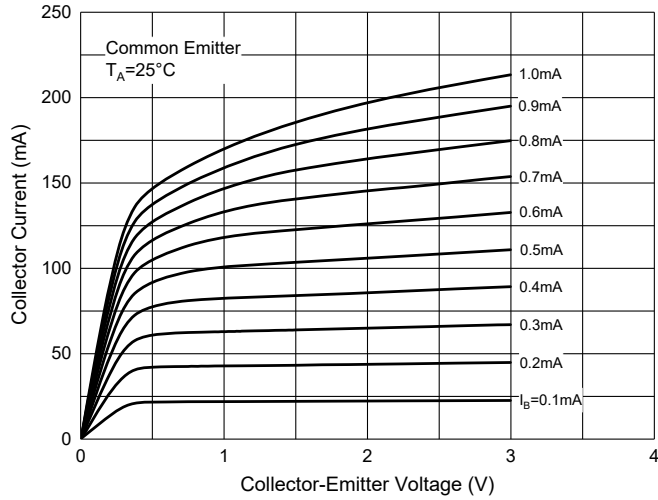


Fig. 2 - DC Current Gain Characteristics

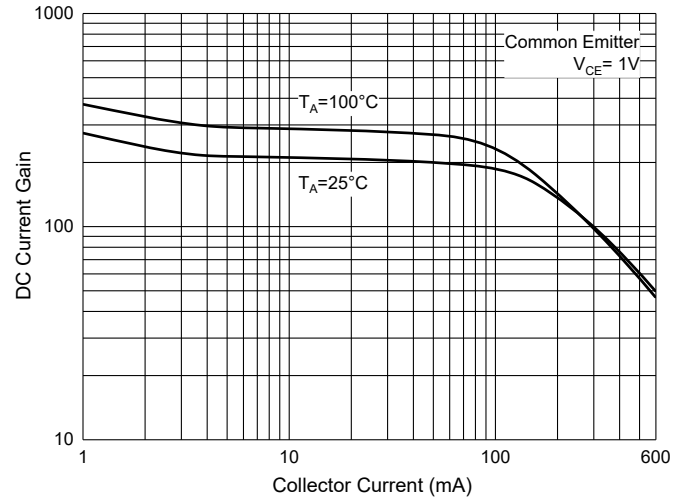


Fig. 3 - Base-Emitter Saturation Voltage Characteristics

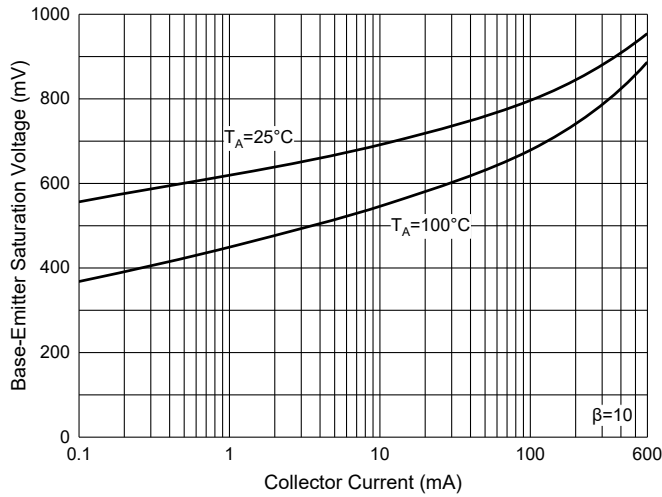


Fig. 4 - Collector-Emitter Saturation Voltage Characteristics

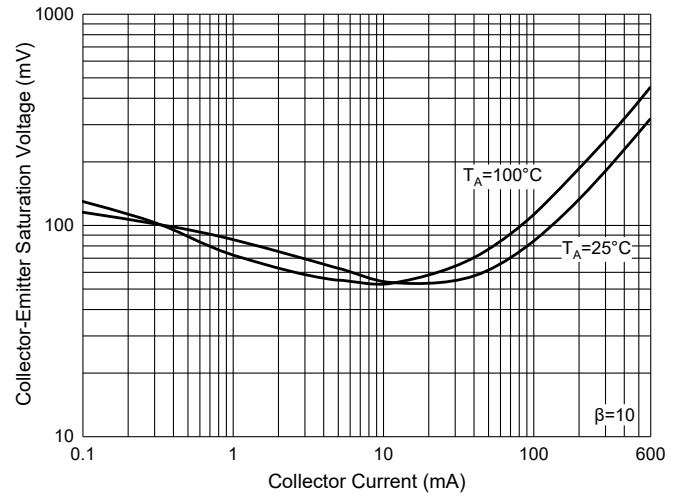


Fig. 5 - Base-Emitter Voltage Characteristics

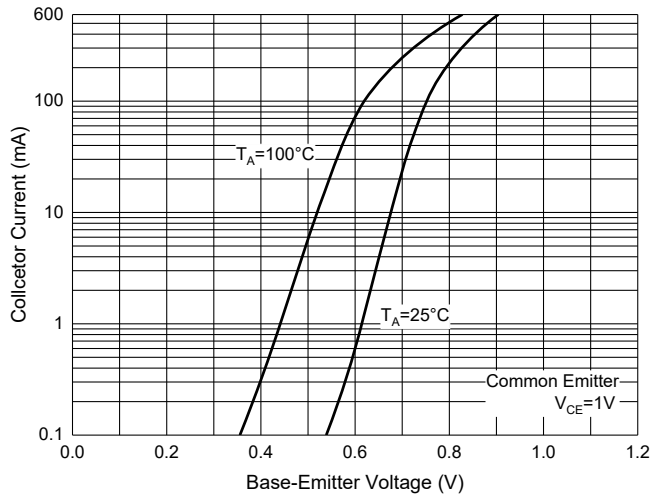
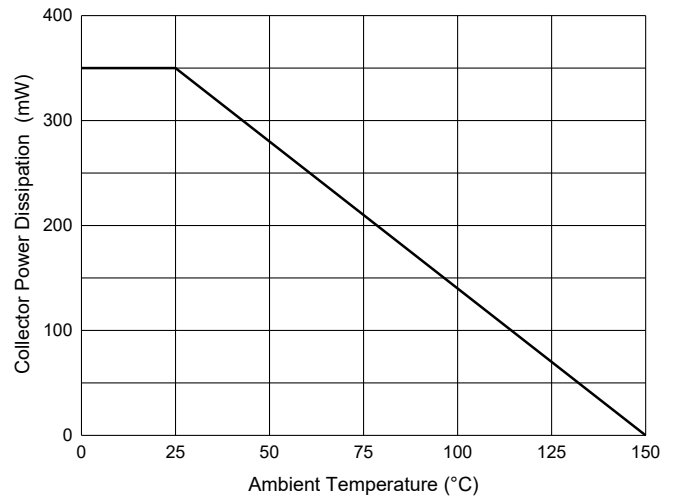


Fig. 6 - Collector Power Derating Curve



Ordering Information

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

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