NPN General Purpose Amplifier

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

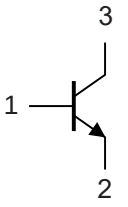
- Operating Junction Temperature Range: -55℃ to +150℃
- Storage Temperature Range: -55℃ to +150℃
- Thermal Resistance: 357℃/W Junction to Ambient

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.

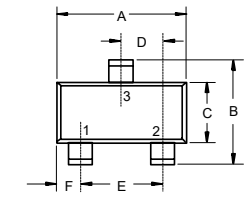
Marking: 2X

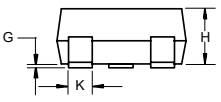
Internal Structure

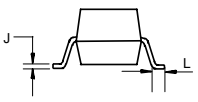


1.BASE
2.EMITTER
3.COLLECTOR

SOT-23

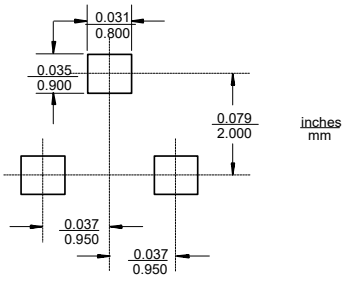






DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.110	0.120	2.80	3.04	
B	0.083	0.104	2.10	2.64	
C	0.047	0.055	1.20	1.40	
D	0.034	0.041	0.85	1.05	
E	0.067	0.083	1.70	2.10	
F	0.018	0.024	0.45	0.60	
G	0.0004	0.006	0.01	0.15	
H	0.035	0.043	0.90	1.10	
J	0.003	0.007	0.08	0.18	
K	0.012	0.020	0.30	0.51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

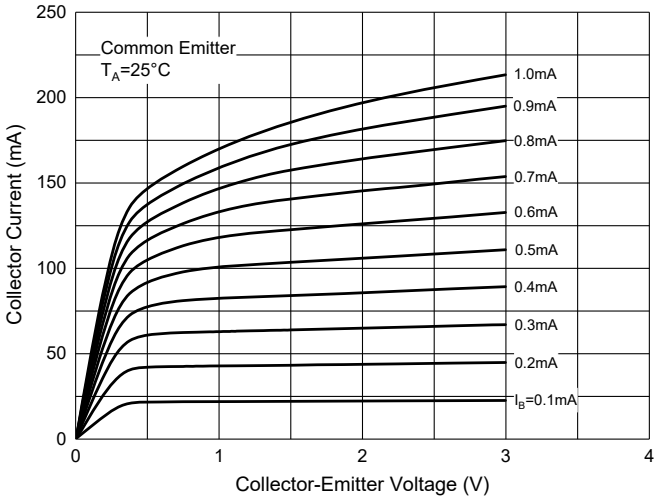


Fig. 2 - DC Current Gain Characteristics

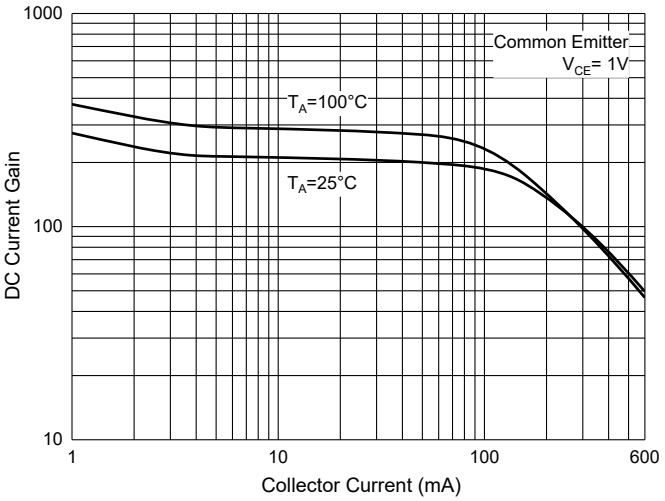


Fig. 3 - Base-Emitter Saturation Voltage Characteristics

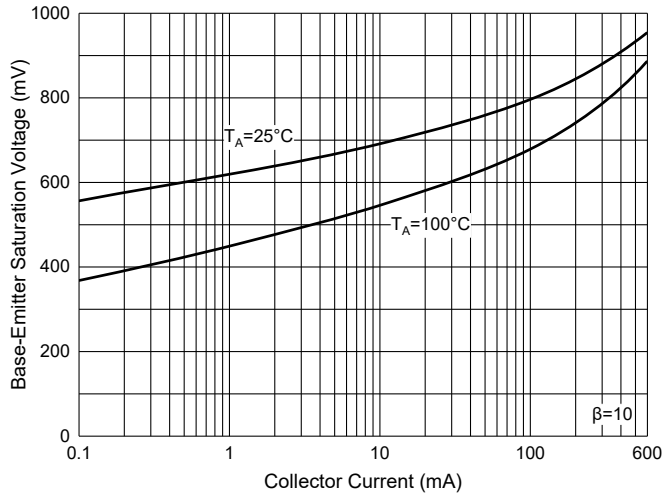


Fig. 4 - Collector-Emitter Saturation Voltage Characteristics

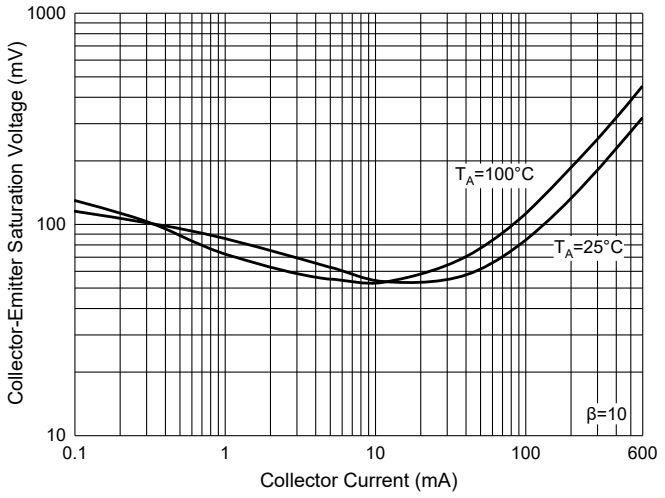


Fig. 5 - Base-Emitter Voltage Characteristics

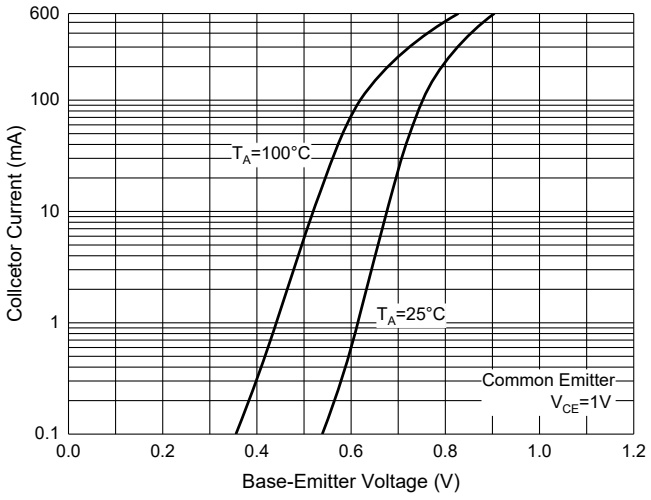
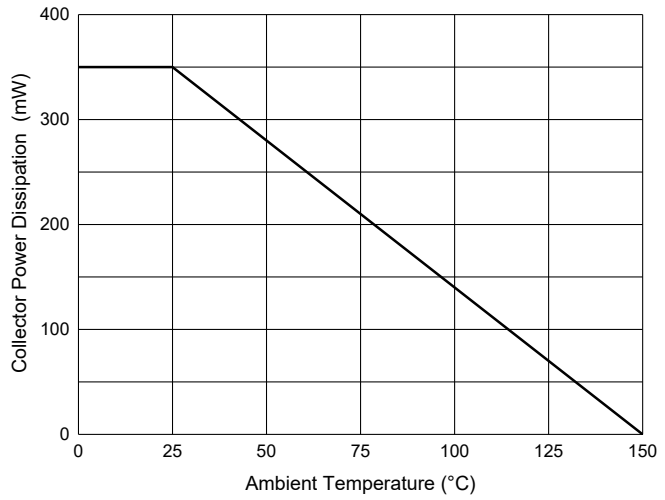


Fig. 6 - Collector Power Derating Curve



Ordering Information

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