

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)

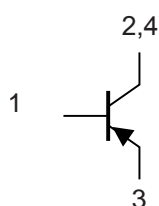
Maximum Ratings @ 25°C Unless Otherwise Specified

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 250°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V _{CBO}	-40	V
Collector-Emitter Voltage	V _{CEO}	-40	V
Emitter-Base Voltage	V _{EBO}	-6	V
Maximum Collector Current	I _{CM}	-0.2	A
Power Dissipation	P _D	0.5	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.

Internal Structure

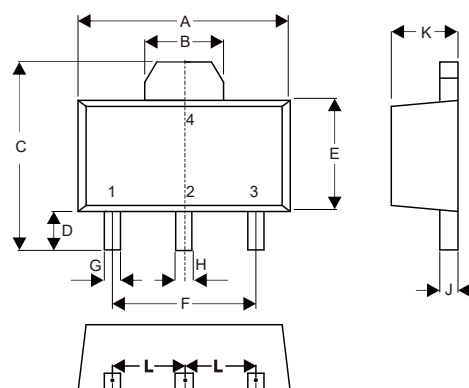


1.BASE
2,4.COLLECTOR
3.EMITTER

Marking: 2A

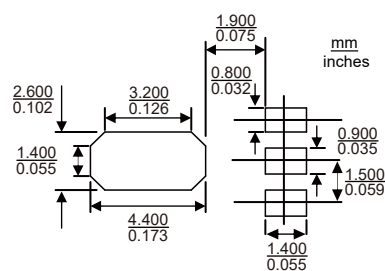
PNP General Purpose Amplifier

SOT-89



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.169	0.185	4.30	4.70	
B	0.061		1.55		TYP.
C	0.154	0.171	3.91	4.35	
D	0.031	0.047	0.80	1.20	
E	0.089	0.104	2.25	2.65	
F	0.118		3.00		TYP.
G	0.013	0.020	0.33	0.52	
H	0.015	0.021	0.38	0.53	
J	0.014	0.017	0.35	0.44	
K	0.055	0.063	1.40	1.60	
L	0.059		1.50		TYP.

Suggested Solder Pad Layout



Electrical Characteristics @ 25°C Unless Otherwise Specified

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-40			V	$I_C=-10\mu A, I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-40			V	$I_C=-1mA, I_B=0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-6			V	$I_E=-10\mu A, I_C=0$
Collector-Base Cutoff Current	I_{CBO}			-50	nA	$V_{CB}=-30V, I_E=0$
Emitter-Base Cutoff Current	I_{EBO}			-50	nA	$V_{EB}=-6V, I_C=0$
DC Current Gain (Note2)	$h_{FE(1)}$	100		300		$V_{CE}=-1V, I_C=-10mA$
	$h_{FE(2)}$	60				$V_{CE}=-1V, I_C=-50mA$
	$h_{FE(3)}$	30				$V_{CE}=-1V, I_C=-100mA$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			-0.25	V	$I_C=-10mA, I_B=-1mA$
				-0.4	V	$I_C=-50mA, I_B=-5mA$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	-0.65		-0.85	V	$I_C=-10mA, I_B=-1mA$
				-0.95	V	$I_C=-50mA, I_B=-5mA$
Transition Frequency	f_T	250			MHz	$V_{CE}=-20V, I_C=-10mA, f=100MHz$
Output Capacitance	C_{cbo}			4.5	pF	$V_{CB}=-5V, I_E=0, f=1MHz$
Input Capacitance	C_{ibo}			10	pF	$V_{EB}=-0.5V, I_C=0, f=1MHz$
Noise Figure	NF			4	dB	$V_{CE}=-5V, I_C=0.1mA, R_S=1K\Omega, f=1KHz$
Delay Time	t_d			35	ns	$V_{CC}=-3V, I_C=-10mA$
Rise Time	t_r			35	ns	$V_{CE}=-0.5V, I_{B1}=-1mA$
Storage Time	t_s			225	ns	$V_{CC}=-3V, I_C=-10mA$
Fall Time	t_f			75	ns	$I_{B1}=I_{B2}=-1mA$

Note: 2.Pulse Width \leq 300 μ s, Duty Cycle \leq 2.0%

Curve Characteristics

Fig. 1 - Static Characteristics

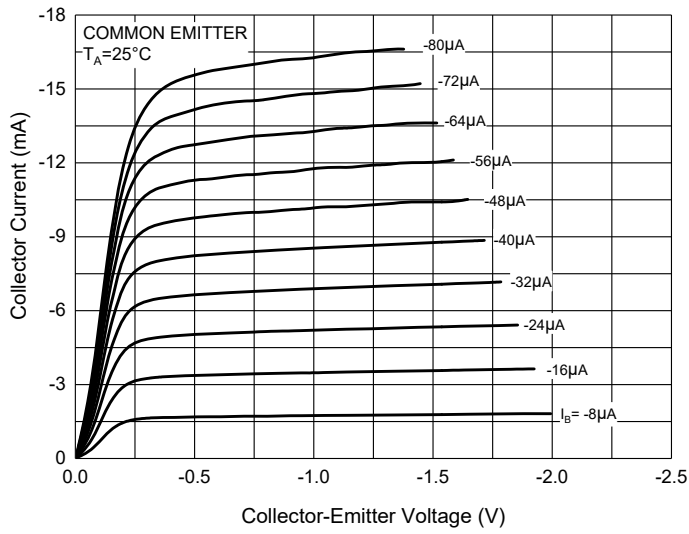


Fig. 2 - DC Current Gain Characteristics

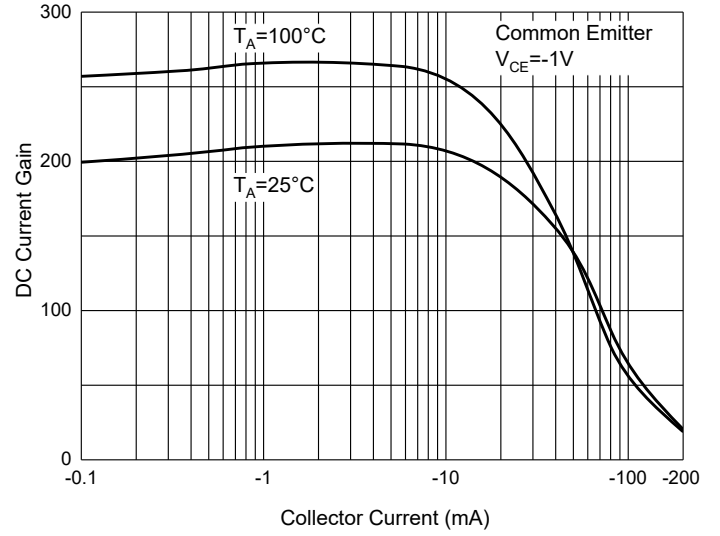


Fig. 3 - Collector-Emitter Saturation Voltage Characteristics

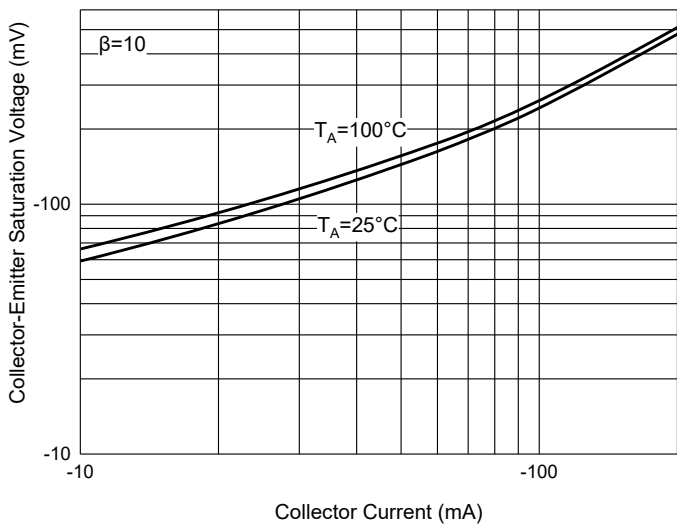


Fig. 4 - Base-Emitter Saturation Voltage Characteristics

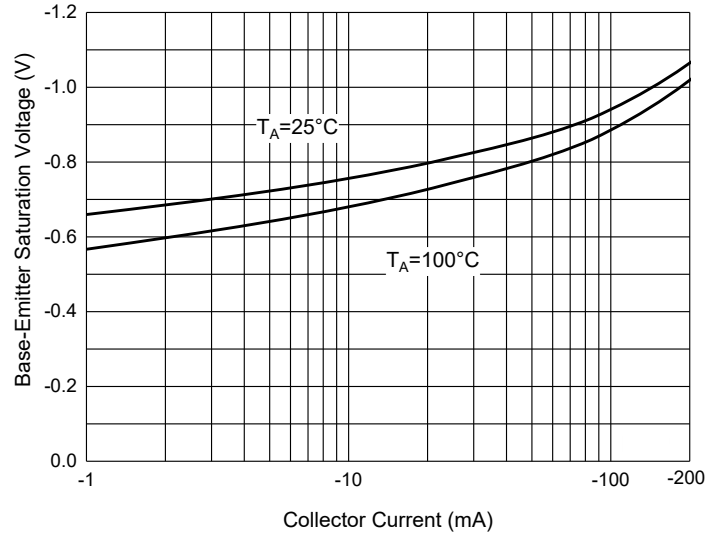


Fig. 5 - Base-Emitter Voltage Characteristics

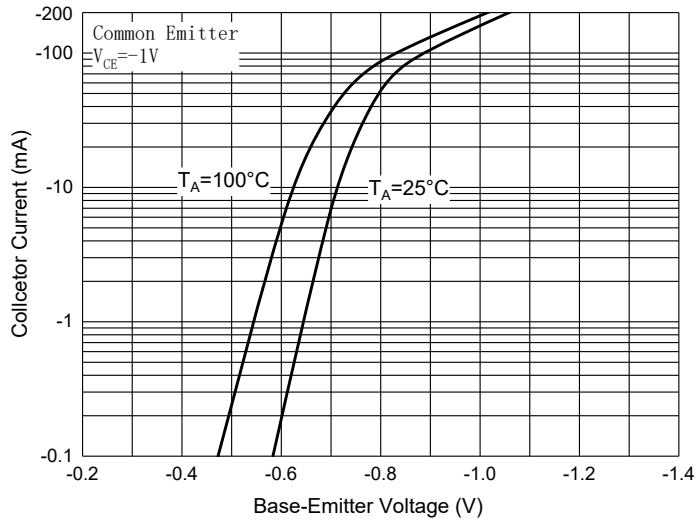
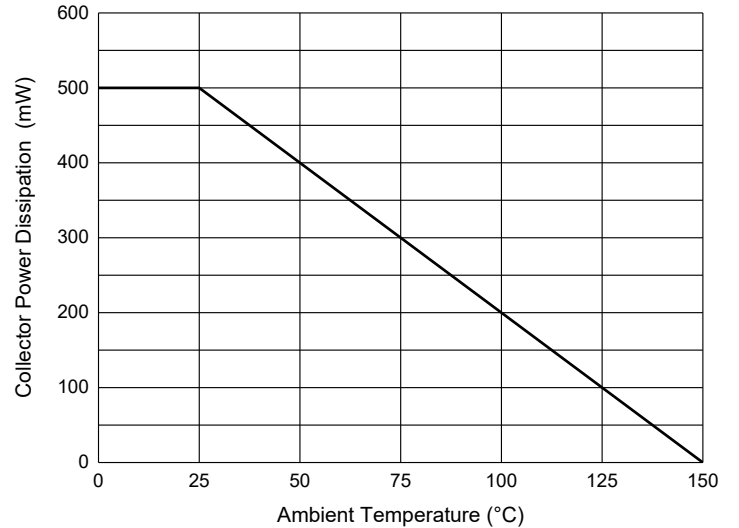


Fig. 6 - Collector Power Derating Curve



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 1Kpcs/Reel

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