Features

- 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)

PNP General Purpose Amplifier

Maximum Ratings @ 25°C Unless Otherwise Specified

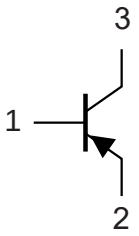
Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	-40	V
Collector-Emitter Voltage	V_{CEO}	-40	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-200	mA
Collector Power Dissipation	P_C	150	mW

Thermal characteristics

Parameter	Symbol	Rating	Unit
Operating Junction Temperature Range	T_J	-55~+150	°C
Storage Temperature Range	T_{stg}	-55~+150	°C
Thermal Resistance from Junction to Ambient	$Rth_{(j-a)}$	833	°C/W

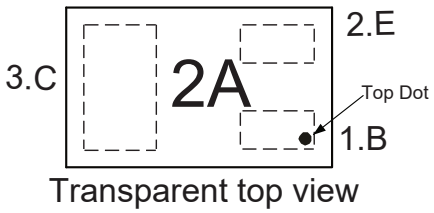
Note: 1. Halogen free "Green” products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

Internal Structure



1.BASE
2.EMITTER
3.COLLECTOR

Marking Code



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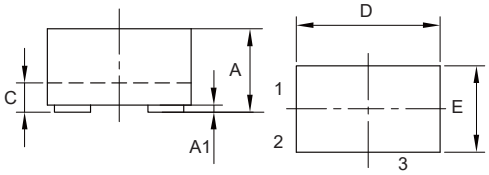
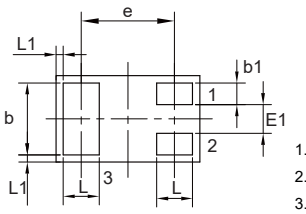
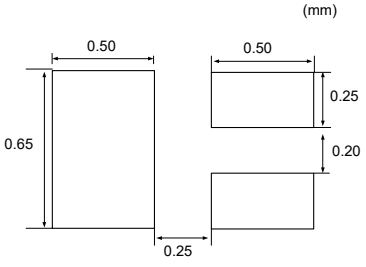




1. BASE
2. EMITTER
3. COLLECTOR

DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.018	0.022	0.45	0.55	
A1	0.000	0.002	0.00	0.05	
b	0.018	0.022	0.45	0.55	
b1	0.004	0.008	0.10	0.20	
c	0.005	0.007	0.12	0.18	
D	0.037	0.042	0.95	1.075	
E	0.022	0.026	0.55	0.675	
E1	0.006	0.010	0.15	0.25	
e	0.026		0.65		TYP.
L	0.008	0.012	0.20	0.30	
L1	0.0002		0.05		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=-10μA, I_E=0
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-40			V	I_C=-1mA, I_B=0
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5			V	I_E=-10μA, 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}=-5V, I_C=0
DC Current Gain	$h_{FE(1)}$	60				V_{CE}=-1V, I_C=-0.1mA
	$h_{FE(2)}$	80				V_{CE}=-1V, I_C=-1mA
	$h_{FE(3)}$	100		300		V_{CE}=-1V, I_C=-10mA
	$h_{FE(4)}$	60				V_{CE}=-1V, I_C=-50mA
	$h_{FE(5)}$	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_{obo}			4.5	pF	V_{CB}=-5V, I_E=0, f=1MHz
Input Capacitance	C_{ibo}			10	pF	V_{BE}=-0.5V, I_C=0, f=1KHz
Noise Figure	NF			4	dB	V_{CE}=-5V, I_C=-100μA RS=1KΩ, f=1MHz
Delay Time	t_d			35	ns	V_{CC}=-3V, V_{BE}=-0.5V
Rise Time	t_r			35	ns	I_C=-10mA, 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

Curve Characteristics

Fig. 1 - Static Characteristics

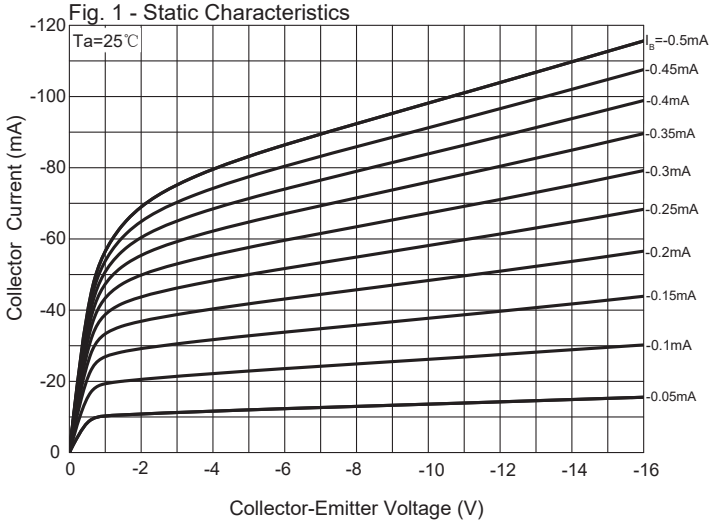


Fig. 2 - DC Current Gain Characteristics

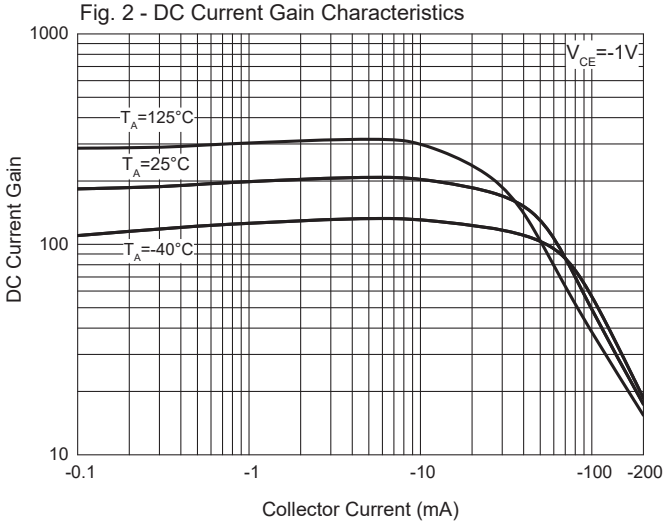


Fig. 3 - Collector-Emitter Saturation Voltage Characteristics

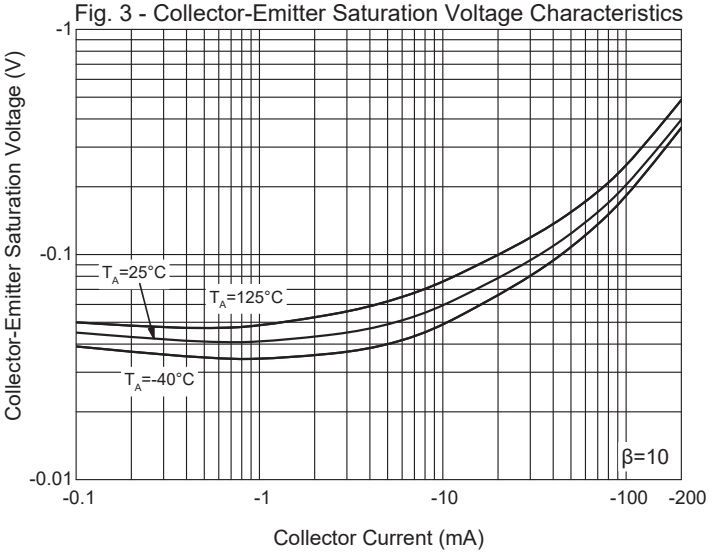


Fig. 4 - Base-Emitter Saturation Voltage Characteristics

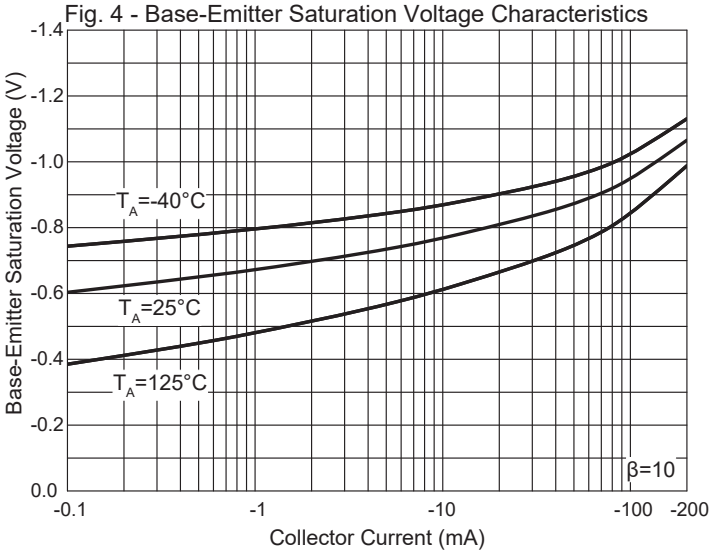


Fig. 5 - Base-Emitter Voltage Characteristics

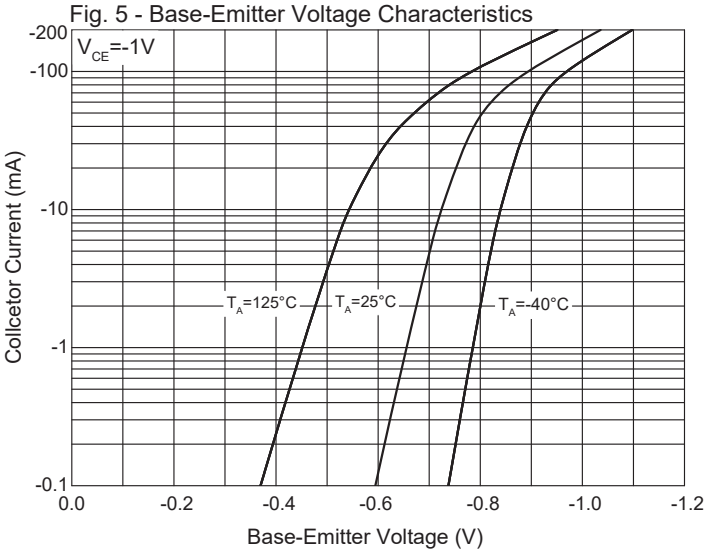
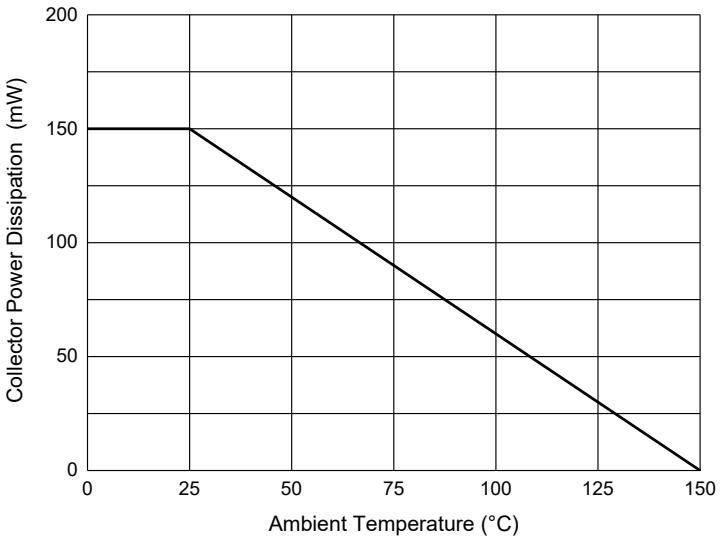


Fig. 6 - Collector Power Derating Curve



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 10Kpcs/Reel