Features

- Halogen Free. "Green" Device (Note 1)
- AEC-Q101 Qualified
- Ideally Suited For Automatic Instertion
- 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)

NPN General Purpose Amplifier

Maximum Ratings @ 25°C Unless Otherwise Specified

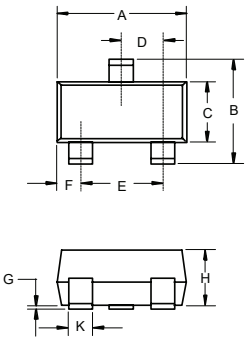
Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	75	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6	V
Maxmium Collector Current	I_{CM}	0.6	A
Power Dissipation	P_D	350	mW

Thermal characteristics

Parameter	Symbol	Rating	Unit
Junction Temperature Range	T_j	-55~+150	°C
Storage Temperature Range	T_{stg}	-55~+150	°C
Thermal Resistance from Junction to Ambient	$Rth_{(J-A)}$	357	°C/W

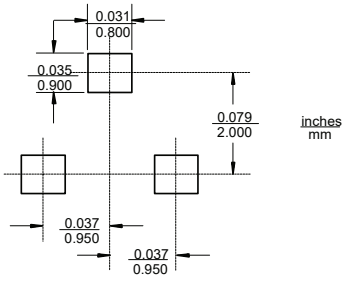
Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

SOT-23

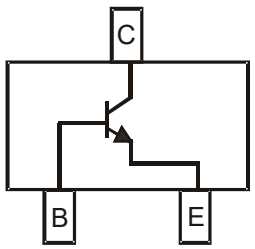


DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.110	0.120	2.80	3.04	
B	0.083	0.104	2.10	2.64	
C	0.047	0.055	1.20	1.40	
D	0.034	0.041	0.85	1.05	
E	0.067	0.083	1.70	2.10	
F	0.018	0.024	0.45	0.60	
G	0.0004	0.006	0.01	0.15	
H	0.035	0.043	0.90	1.10	
J	0.003	0.007	0.08	0.18	
K	0.014	0.020	0.35	0.51	
L	0.007	0.020	0.20	0.50	

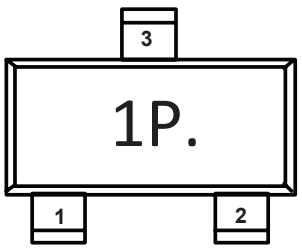
Suggested Solder Pad Layout



Internal Structure



Device Marking



Electrical Characteristics @ 25°C Unless Otherwise Specified

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	75			V	I_C=10μA, I_E=0
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	40			V	I_C=10mA, I_B=0
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	6			V	I_E=10μA, I_C=0
Collector Cutoff Current	I_{CEX}			10	nA	V_{CE}=60V,V_{BE}=3V
DC Current Gain(2)	h_{FE1}	35				V_{CE}=10V, I_C=0.1mA
	h_{FE2}	50				V_{CE}=10V, I_C=1mA
	h_{FE3}	75				V_{CE}=10V, I_C=10mA
	h_{FE4}	100		300		V_{CE}=10V, I_C=150mA
	h_{FE5}	50				V_{CE}=1V, I_C=150mA
	h_{FE6}	40				V_{CE}=10V, I_C=500mA
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			0.3	V	I_C=150mA, I_B=15mA
				1.0	V	I_C=500mA, I_B=50mA
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	0.6		1.2	V	I_C=150mA, I_B=15mA
				2.0	V	I_C=500mA, I_B=50mA
Transition Frequency	f_T	300			MHz	V_{CE}=20V, I_C=20mA, f=100MHz
Output Capacitance	C_{obo}			8	pF	V_{CB}=10V, I_E=0, f=1MHz,
Input Capacitance	C_{ibo}			45	pF	V_{BE}=0.5V, I_C=0, f=1MHz,
Noise Figure	NF			4	dB	V_{CE}=10V, I_C=100uA, f=1kHz, R_S=1kΩ
Delay Time	t_d			10	ns	V_{CC}=30V, V_{BE}=0.5V
Rise Time	t_r			25	ns	I_C=150mA, I_{B1}=15mA
Storage Time	t_s			225	ns	V_{CC}=30V, I_C=150mA
Fall Time	t_f			60	ns	I_{B1}=I_{B2}=15mA

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

Curve Characteristics

Fig. 1 - Static Characteristics

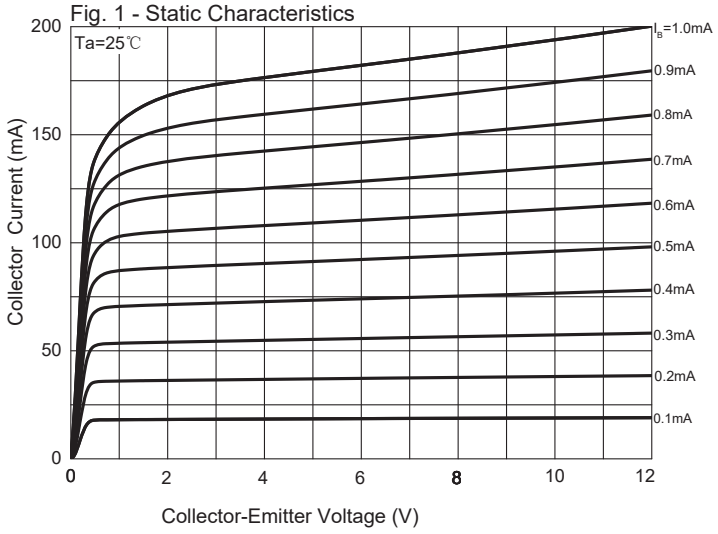


Fig. 2 - DC Current Gain Characteristics

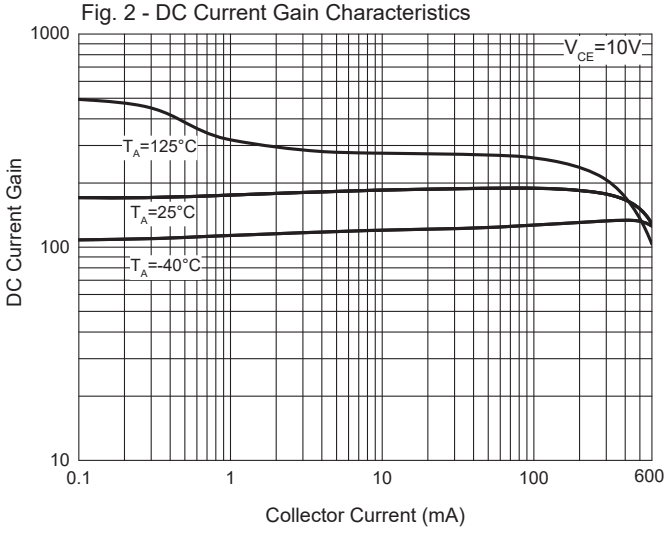


Fig. 3 - Collector-Emitter Saturation Voltage Characteristics

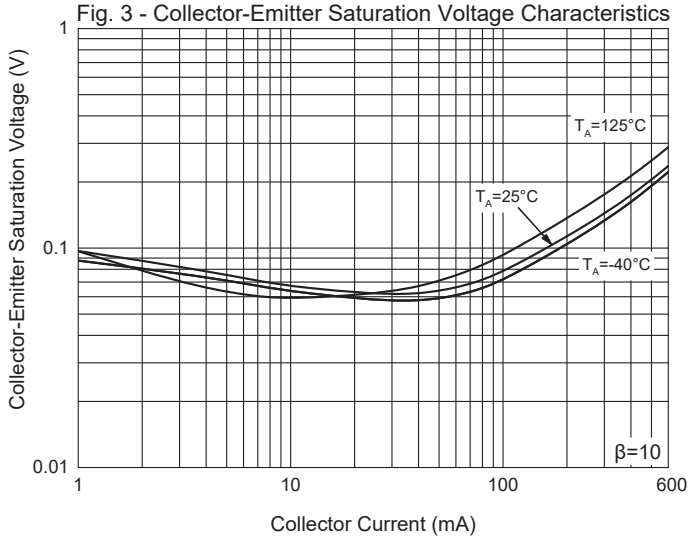


Fig. 4 - Base-Emitter Saturation Voltage Characteristics

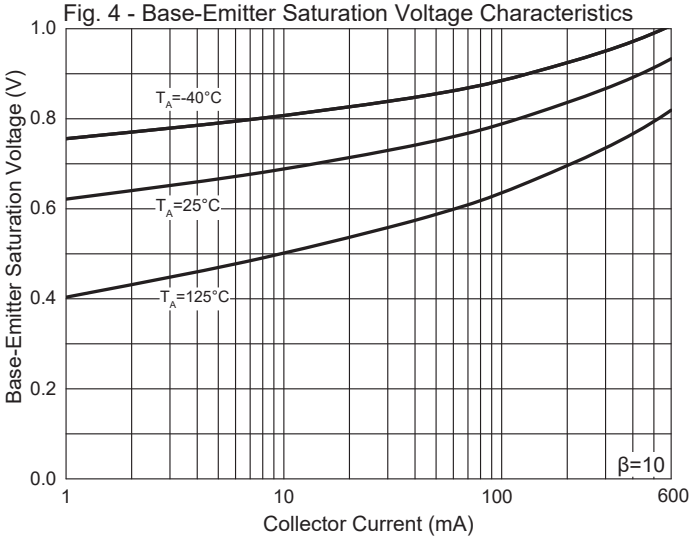


Fig. 5 - Base-Emitter Voltage Characteristics

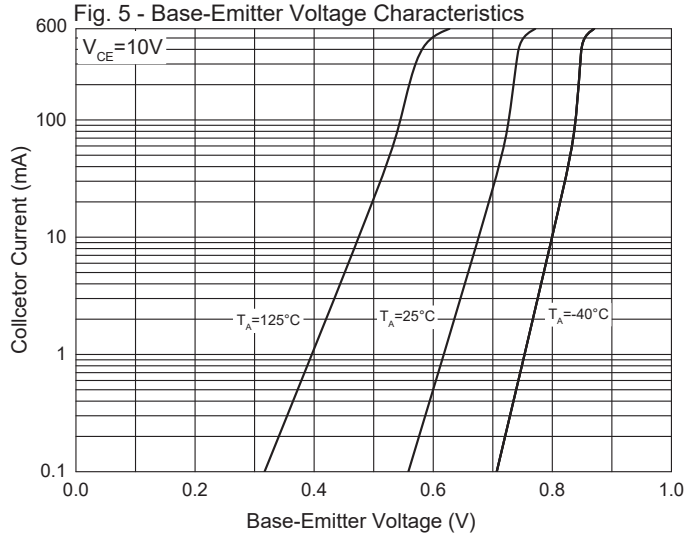
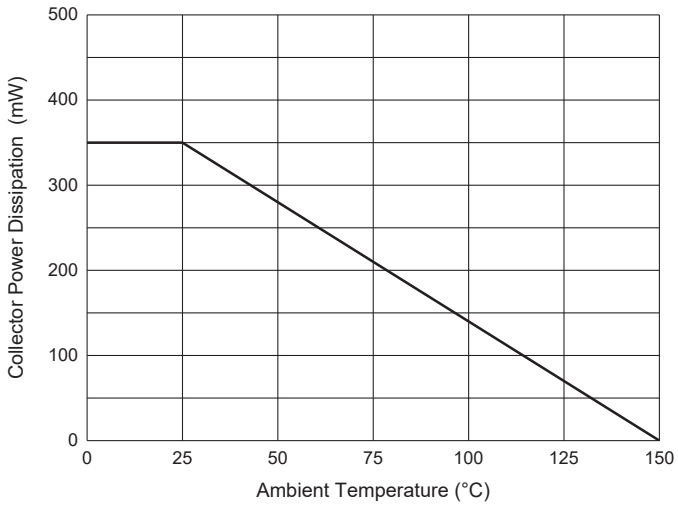


Fig. 6 - Power Derating Curve



Ordering Information

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