

**Features**

- Low  $V_{CE(sat)}$  Optimal for Low Voltage Operation
- 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)

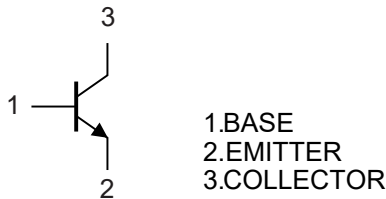
**Maximum Ratings @ 25°C Unless Otherwise Specified**

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 625°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	40	V
Collector-Emitter Voltage	$V_{CEO}$	32	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Continuous Collector Current	$I_C$	500	mA
Power Dissipation	$P_D$	200	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.

**Internal Structure**



**NPN Silicon Epitaxial Transistors**

**SOT-323**

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.071	0.087	1.80	2.20	
B	0.045	0.053	1.15	1.35	
C	0.083	0.096	2.10	2.45	
D	0.026		0.65		TYP.
E	0.047	0.055	1.20	1.40	
F	0.012	0.016	0.30	0.40	
G	0.000	0.004	0.00	0.10	
H	0.035	0.044	0.90	1.10	
J	0.002	0.010	0.05	0.25	
K	0.006	0.016	0.15	0.40	
L	0.010	0.018	0.26	0.46	

**QseecqrcbAQmjbcpAN\_bAJ\_wmsr**

**Electrical Characteristics @  $T_A=25^\circ\text{C}$  Unless Otherwise Specified**

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	40			V	$I_C=100\mu\text{A}, I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	32			V	$I_C=1\text{mA}, I_B=0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5			V	$I_E=100\mu\text{A}, I_C=0$
Collector Cutoff Current	$I_{CBO}$			1	$\mu\text{A}$	$V_{CB}=20\text{V}, I_E=0$
Emitter Cutoff Current	$I_{EBO}$			1	$\mu\text{A}$	$V_{EB}=4\text{V}, I_C=0$
DC Current Gain	$h_{FE}$	82		390		$V_{CE}=3\text{V}, I_C=10\text{mA}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			0.4	V	$I_C=100\text{mA}, I_B=10\text{mA}$
Transition Frequency	$f_T$		250		MHz	$V_{CE}=5\text{V}, I_C=20\text{mA}, f=100\text{MHz}$
Output Capacitance	$C_{ob}$		6		pF	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$

**Classification of  $h_{FE}$** 

Rank	P	Q	R
Range	82-180	120-270	180-390
Marking	CP	CQ	CR

**Curve Characteristics**

Fig. 1 - Static Characteristics

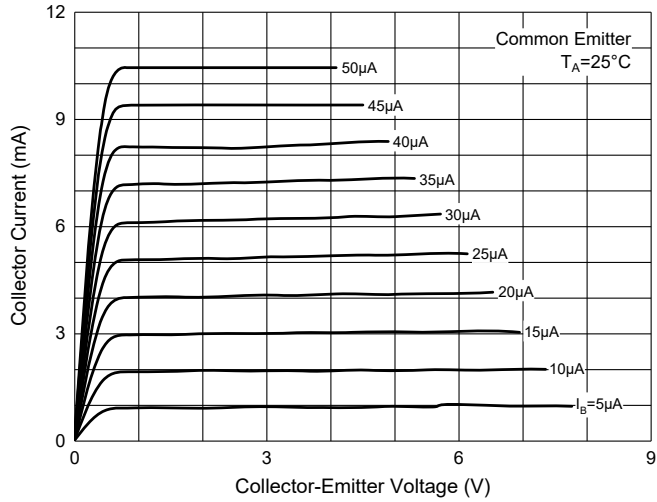


Fig. 2 - DC Current Gain Characteristics

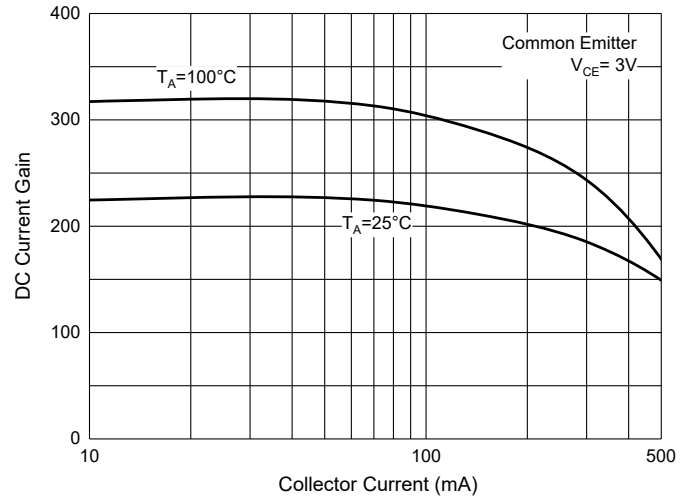


Fig. 3 - Collector-Emitter Saturation Voltage Characteristics

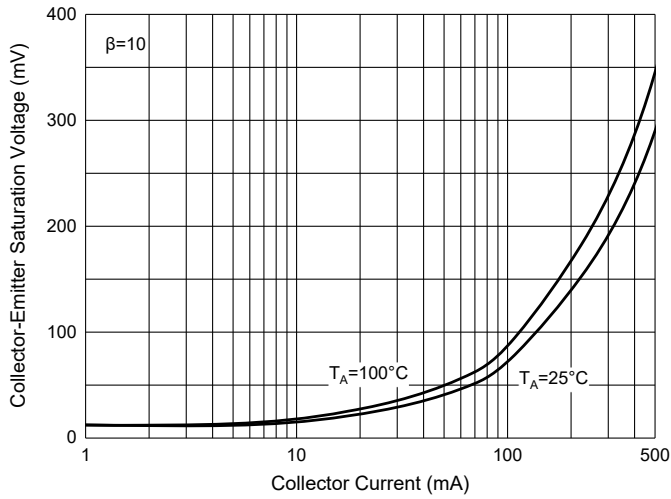


Fig. 4 - Base-Emitter Saturation Voltage Characteristics

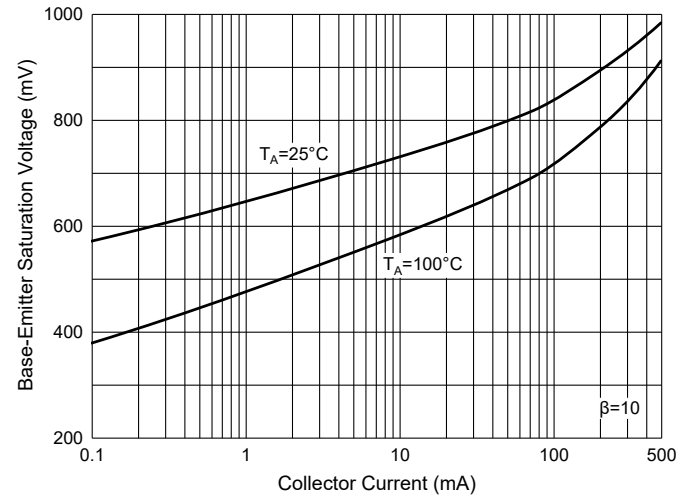


Fig. 5 - Transition frequency Characteristics

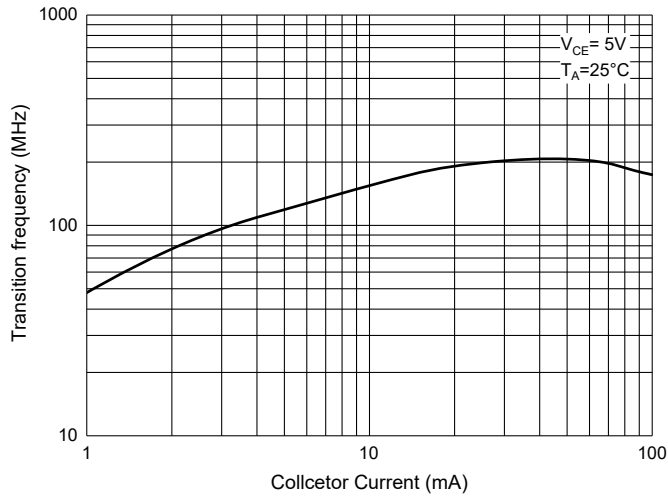
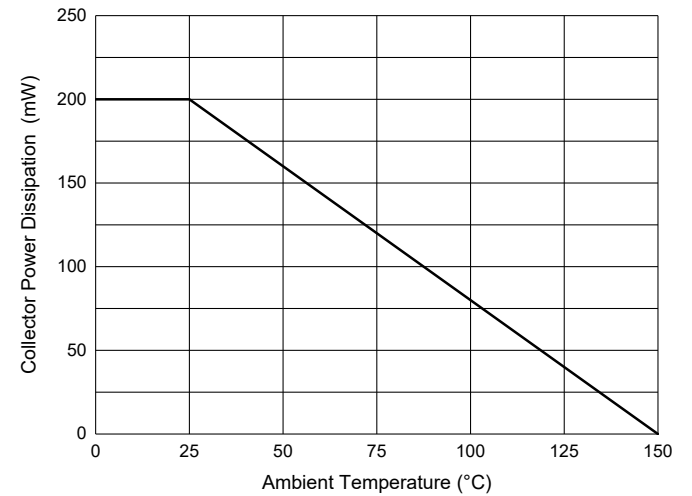


Fig. 6 - Collector Power Derating Curve



## Ordering Information

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

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