

**Features**

- Halogen Free Available Upon Request By Adding Suffix "-HF"
- 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)

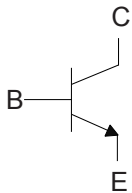
**Maximum Ratings @ 25°C Unless Otherwise Specified**

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 139°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	160	V
Collector-Emitter Voltage	$V_{CEO}$	160	V
Emitter-Base Voltage	$V_{EBO}$	6	V
Continuous Collector Current	$I_C$	1	A
Power Dissipation	$P_D$	0.9	W

**Marking:** C2383

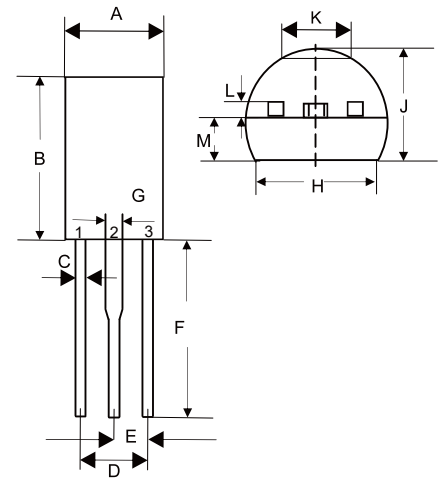
**Internal Structure**



- 1.EMITTER
- 2.COLLECTOR
- 3.BASE

**NPN  
Plastic-Encapsulate  
Transistor**

**TO-92MOD**



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.228	0.244	5.80	6.20	
B	0.331	0.346	8.40	8.80	
C	0.016	0.024	0.40	0.60	
D	0.114	0.122	2.90	3.10	Straight Lead
	0.173	0.220	4.40	5.60	Bent Lead
E	0.059		1.50		Straight Lead
	0.086	0.110	2.20	2.80	Bent Lead
F	0.543	0.559	13.80	14.20	
G	0.035	0.043	0.90	1.10	
H	0.157	-----	4.00	-----	
J	0.185	0.201	4.70	5.10	
K	-----	0.063	-----	1.60	
L	0.016	0.020	0.40	0.50	
M	0.068	0.080	1.73	2.03	

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

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	160			V	$I_C=100\mu\text{A}, I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	160			V	$I_C=10\text{mA}, I_B=0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	6			V	$I_E=10\mu\text{A}, I_C=0$
Collector-Base Cutoff Current	$I_{CBO}$			1	$\mu\text{A}$	$V_{CB}=150\text{V}, I_E=0$
Collector Cutoff Current	$I_{CER}$			10	$\mu\text{A}$	$V_{CB}=150\text{V}, R_{EB}=10\text{M}\Omega$
Emitter-Base Cutoff Current	$I_{EBO}$			1	$\mu\text{A}$	$V_{EB}=6\text{V}, I_C=0$
DC Current Gain	$h_{FE}$	60		320		$V_{CE}=5\text{V}, I_C=200\text{mA}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			1	V	$I_C=500\text{mA}, I_B=50\text{mA}$
Base-Emitter Voltage	$V_{BE}$			0.75	V	$V_{CE}=5\text{V}, I_C=5\text{mA}$
Transition Frequency	$f_T$	20			MHz	$V_{CE}=5\text{V}, I_C=200\text{mA}$

**Classification of  $h_{FE(1)}$** 

Rank	R	O	Y
Range	60-120	100-200	160-320

**Curve Characteristics**

Fig. 1 - Static Characteristics

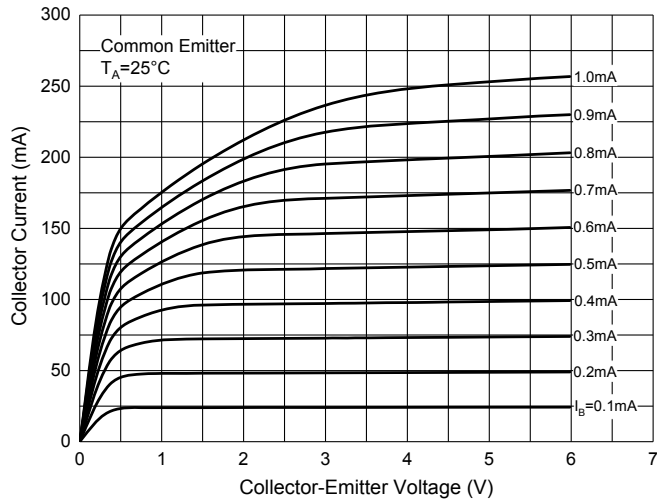


Fig. 2 - DC Current Gain Characteristics

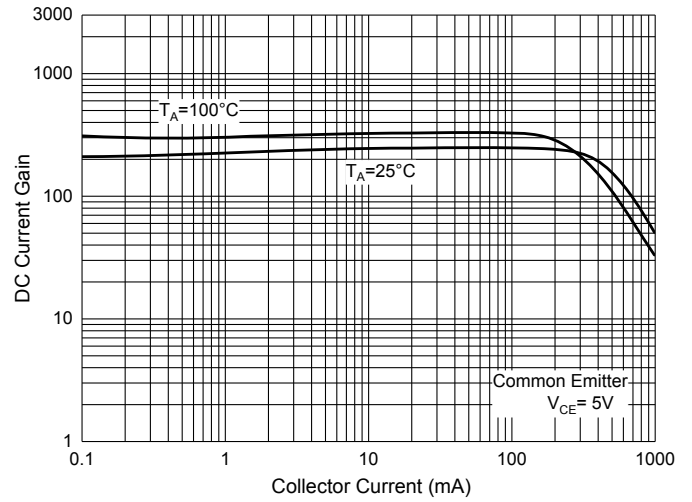


Fig. 3 - Base-Emitter Saturation Voltage Characteristics

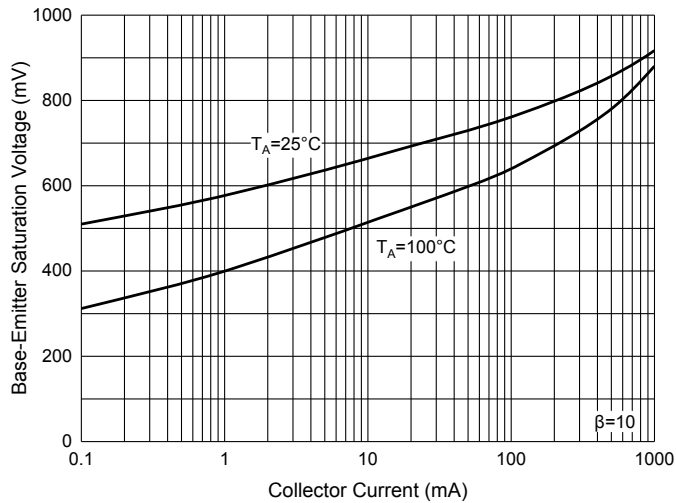


Fig. 4 - Collector-Emitter Saturation Voltage Characteristics

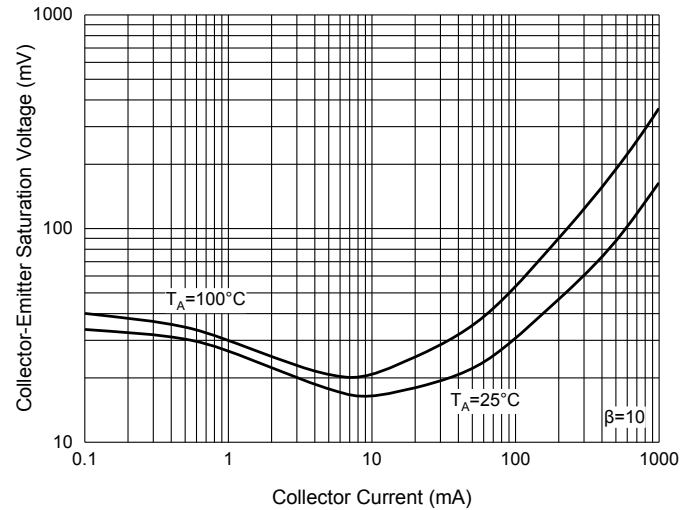


Fig. 5 - Base-Emitter Voltage Characteristics

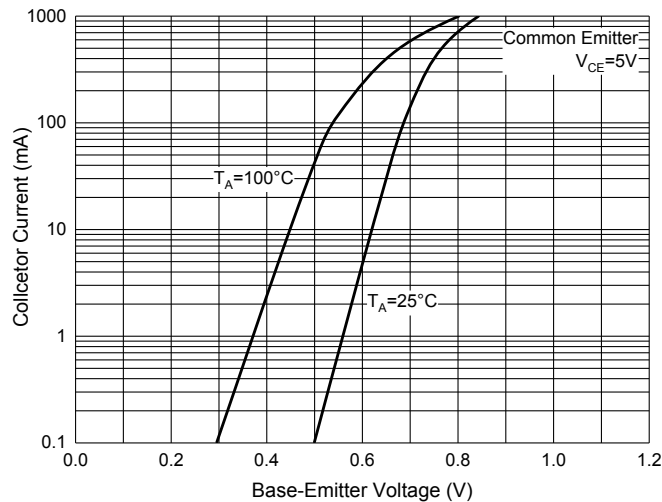
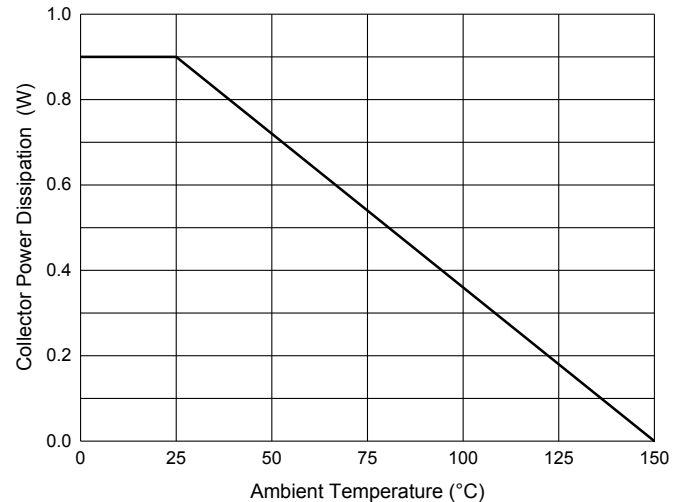


Fig. 6 - Collector Power Derating Curve



## Ordering Information

Device	Packing
Part Number-AP	Ammo Packing: 20Kpcs/Carton
Part Number-BP	Bulk: 50Kpcs/Carton

Note : Adding "-HF" Suffix for Halogen Free, eg. Part Number-TP-HF

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