

# 2SC2383-HAF

## NPN Silicon Epitaxial Planar Transistor

### Features

- The transistor is subdivided into three groups, R, O and Y, according to its DC current gain
- On special request, these transistors can be manufactured in different pin configurations
- Halogen and Antimony Free(HAF), RoHS compliant



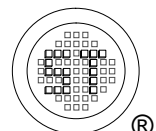
1. Emitter 2. Collector 3. Base  
TO-92 Plastic Package

### Absolute Maximum Ratings ( $T_a = 25\text{ }^\circ\text{C}$ )

Parameter	Symbol	Value	Unit
Collector Base Voltage	$V_{CBO}$	160	V
Collector Emitter Voltage	$V_{CEO}$	160	V
Emitter Base Voltage	$V_{EBO}$	6	V
Collector Current	$I_C$	1	A
Base Current	$I_B$	0.5	A
Collector Power Dissipation	$P_{tot}$	900	mW
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	- 55 to + 150	$^\circ\text{C}$

### Thermal Characteristics

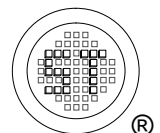
Parameter	Symbol	Max.	Unit
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	139	$^\circ\text{C/W}$



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### Characteristics at $T_a = 25\text{ }^\circ\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit	
DC Current Gain at $V_{CE} = 5\text{ V}$ , $I_C = 200\text{ mA}$	Current Gain Group R O Y	$h_{FE}$	60	-	120	-
		$h_{FE}$	100	-	200	-
		$h_{FE}$	160	-	320	-
Collector Base Cutoff Current at $V_{CB} = 150\text{ V}$	$I_{CBO}$	-	-	1	$\mu\text{A}$	
Emitter Base Cutoff Current at $V_{EB} = 6\text{ V}$	$I_{EBO}$	-	-	1	$\mu\text{A}$	
Collector Base Breakdown Voltage at $I_C = 1\text{ mA}$	$V_{(BR)CBO}$	160	-	-	V	
Collector Emitter Breakdown Voltage at $I_C = 10\text{ mA}$	$V_{(BR)CEO}$	160	-	-	V	
Emitter Base Breakdown Voltage at $I_E = 1\text{ mA}$	$V_{(BR)EBO}$	6	-	-	V	
Collector Emitter Saturation Voltage at $I_C = 500\text{ mA}$ , $I_B = 50\text{ mA}$	$V_{CE(sat)}$	-	-	1.5	V	
Base Emitter Voltage at $I_C = 5\text{ mA}$ , $V_{CE} = 5\text{ V}$	$V_{BE}$	0.45	-	0.75	V	
Transition Frequency at $V_{CE} = 5\text{ V}$ , $I_C = 200\text{ mA}$	$f_T$	20	100	-	MHz	
Collector Output Capacitance at $V_{CB} = 10\text{ V}$ , $f = 1\text{ MHz}$	$C_{ob}$	-	-	20	pF	



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## Electrical Characteristics Curves

Fig. 1 Output Characteristics Curve

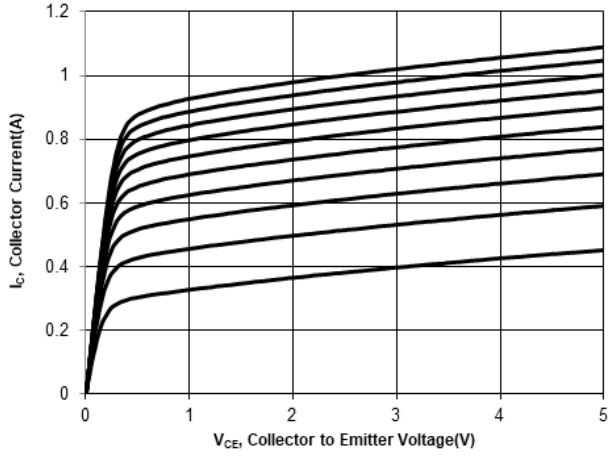


Fig. 2 Output Characteristics Curve

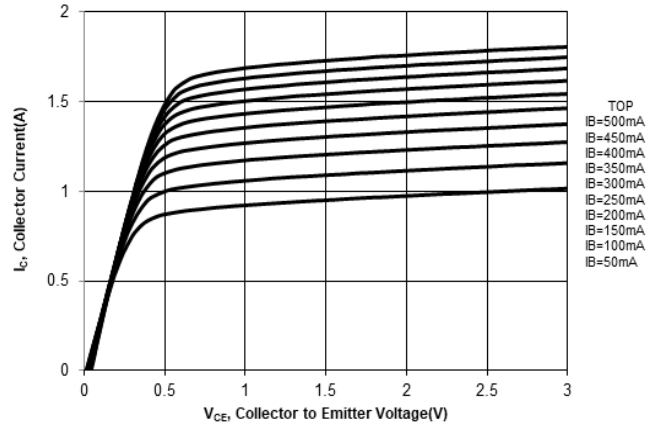


Fig. 3 Collector Current Vs. Base to Emitter Voltage

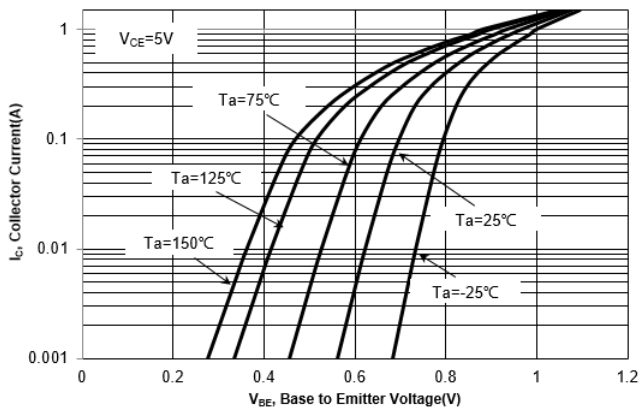
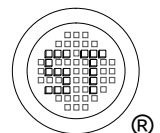
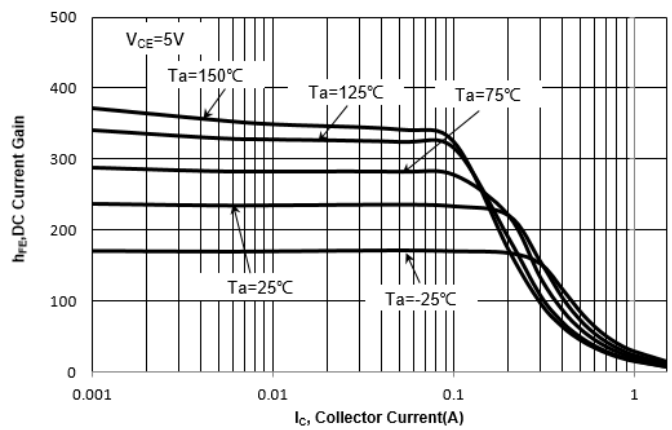


Fig. 4  $h_{FE}$ , DC Current Gain vs. Collector Current



## Electrical Characteristics Curves

Fig. 5  $V_{BE(SAT)}$  vs. Collector Current

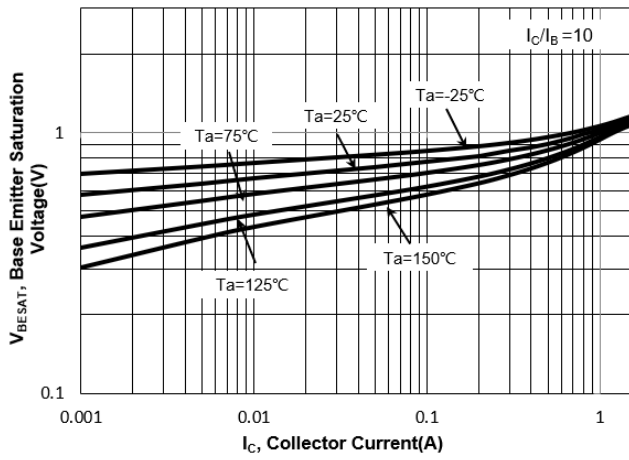


Fig. 6  $V_{CE(SAT)}$  vs. Collector Current

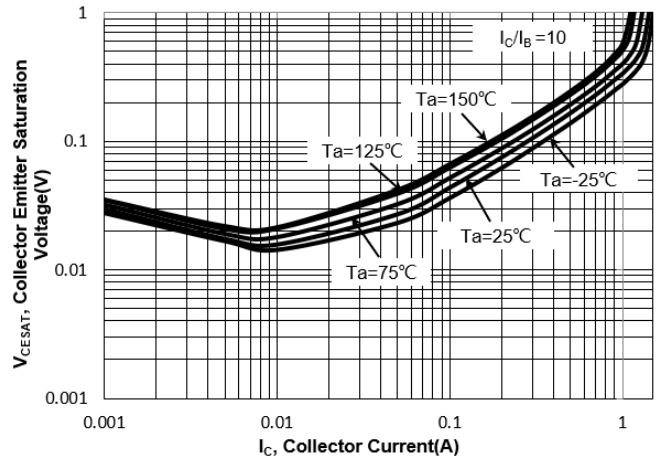


Fig. 7 Junction Capacitance

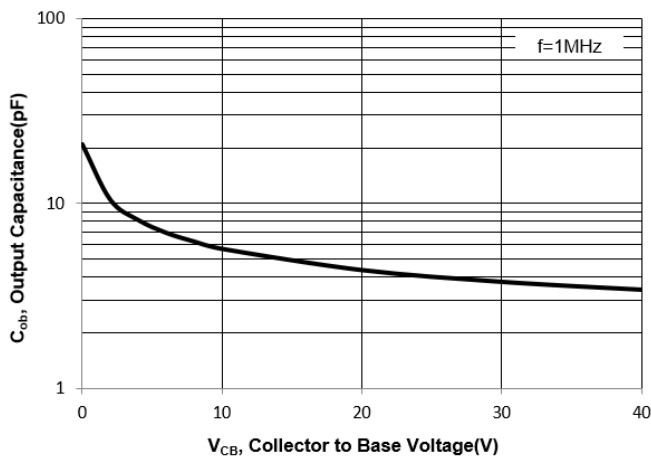
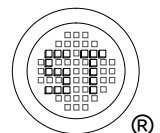
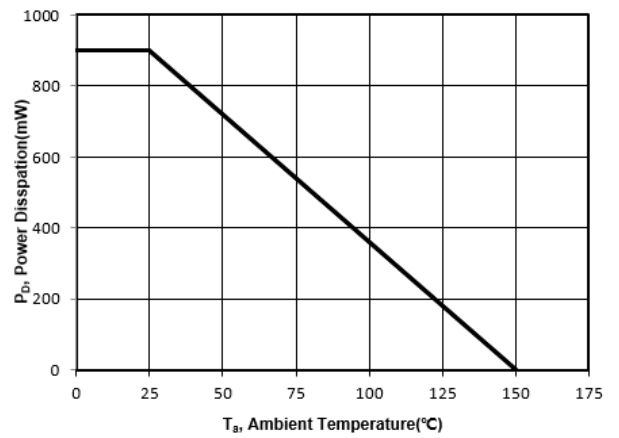
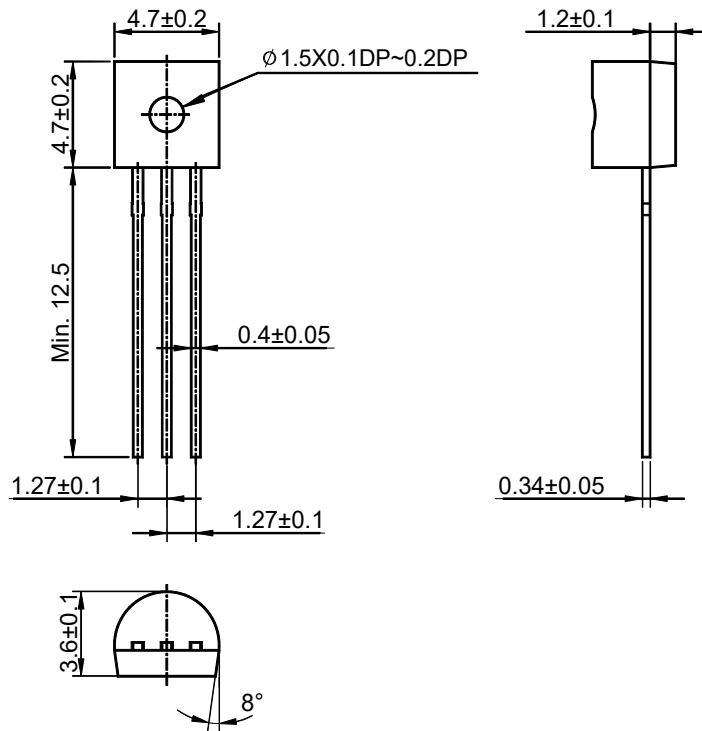


Fig. 8. Power Derating Curve



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## TO-92 Package Outline (Dimensions in millimeters)



## TO-92 Ammo-Pack Outline (Dimensions in millimeters)

