

# 2SC2073-HAF

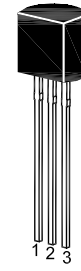
## NPN Silicon Epitaxial Planar Power Transistor

### Features

- High collector breakdown voltage
- Low collector saturation voltage
- Halogen and Antimony Free(HAF), RoHS compliant

### Applications

- General purpose amplifier
- High voltage application



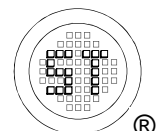
1. Emitter 2. Collector 3. Base  
TO-92 Plastic Package

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

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, DC	$I_C$	1	A
Peak Collector Current, Single pulse, $t_p = 300 \mu\text{s}$	$I_{CM}$	2	A
Power Dissipation	$P_{tot}$	1	W
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	- 55 to + 150	$^\circ\text{C}$

### Thermal Characteristics

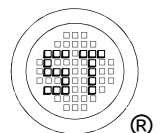
Parameter	Symbol	Max.	Unit
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	125	$^\circ\text{C/W}$



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

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $V_{CE} = 5\text{ V}$ , $I_C = 30\text{ mA}$	$h_{FE}$	160	-	400	-
Collector Base Cutoff Current at $V_{CB} = 160\text{ V}$	$I_{CBO}$	-	-	100	nA
Emitter Base Cutoff Current at $V_{EB} = 4\text{ V}$	$I_{EBO}$	-	-	100	nA
Collector Base Breakdown Voltage at $I_C = 100\text{ }\mu\text{A}$	$V_{(BR)CBO}$	160	-	-	V
Collector Emitter Breakdown Voltage at $I_C = 1\text{ mA}$	$V_{(BR)CEO}$	160	-	-	V
Emitter Base Breakdown Voltage at $I_E = 100\text{ }\mu\text{A}$	$V_{(BR)EBO}$	6	-	-	V
Collector Emitter Saturation Voltage at $I_C = 500\text{ mA}$ , $I_B = 50\text{ mA}$	$V_{CE(sat)}$	-	-	0.5	V
Base Emitter Saturation Voltage at $I_C = 500\text{ mA}$ , $I_B = 50\text{ mA}$	$V_{BE(sat)}$	-	-	1.2	V
Transition frequency at $V_{CE} = 5\text{ V}$ , $I_C = 50\text{ mA}$	$f_T$	-	150	-	MHz
Output Capacitance at $V_{CB} = 10\text{ V}$ , $f = 1\text{ MHz}$	$C_{ob}$	-	6	-	pF



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## Electrical Characteristics Curves

Fig. 1 Output Characteristics Curve

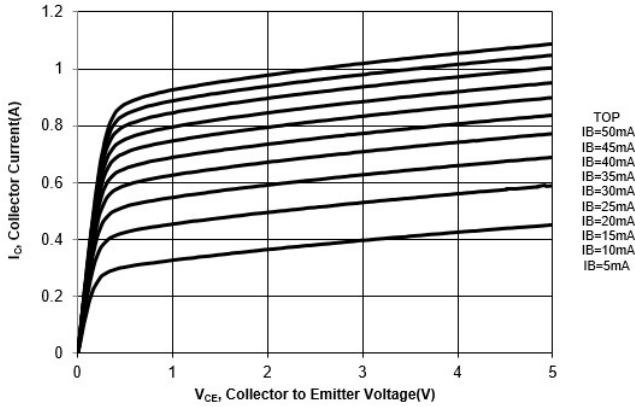


Fig. 2 Collector Current vs. Base to Emitter Voltage

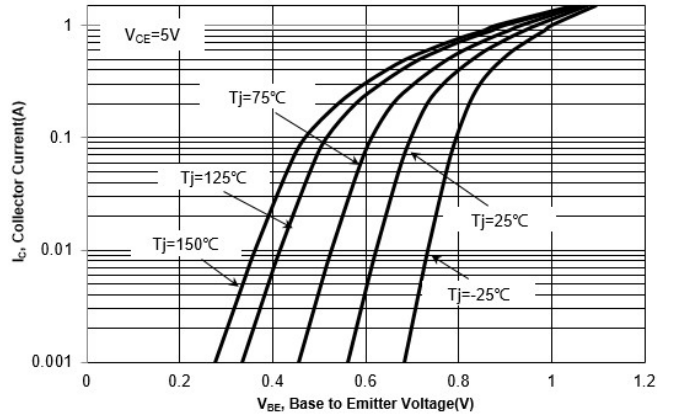


Fig. 3 DC Current Gain vs. Collector Current

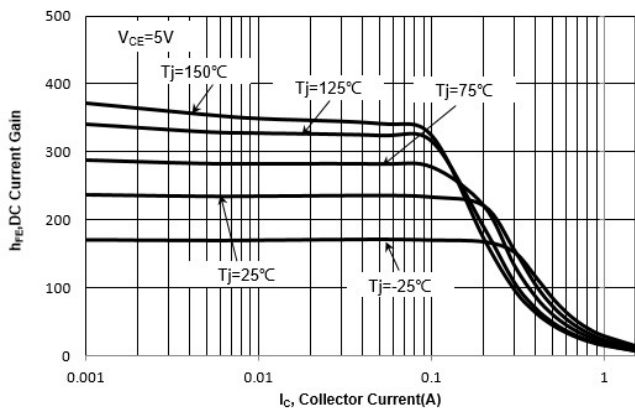
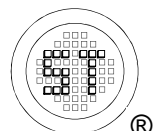
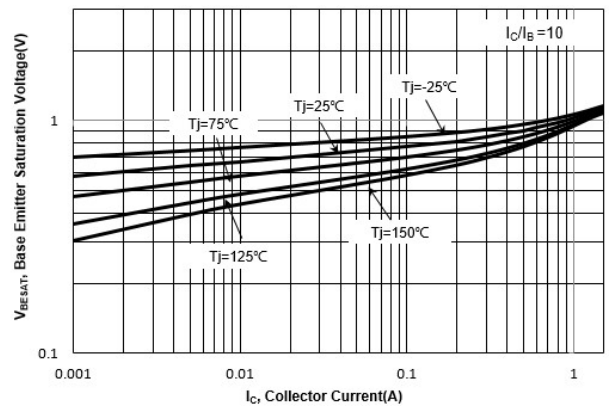


Fig. 4  $V_{BESAT}$  vs. Collector Current



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## Electrical Characteristics Curves

Fig. 5  $V_{CESAT}$  vs. Collector Current

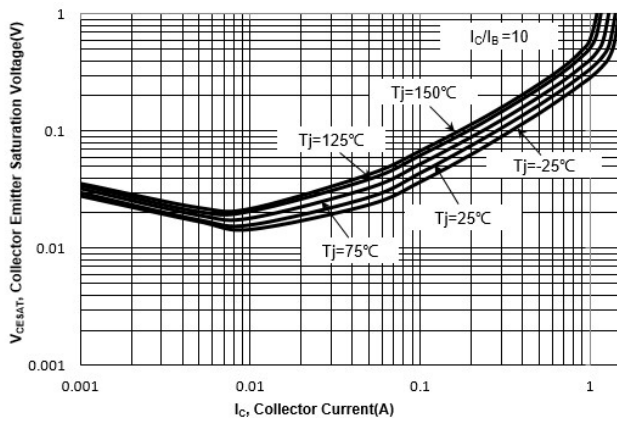


Fig. 6 Output Capacitance

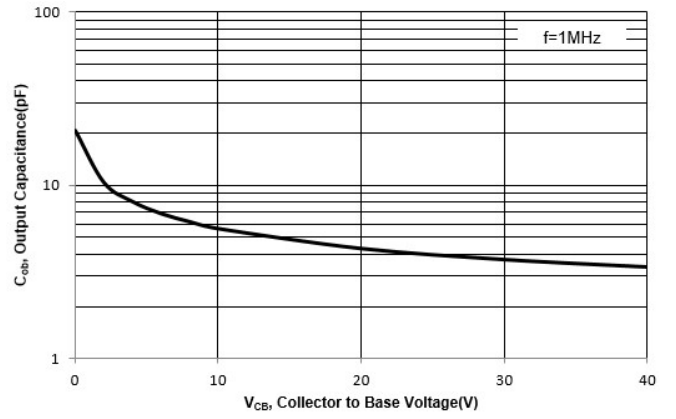
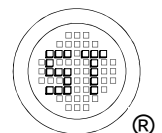
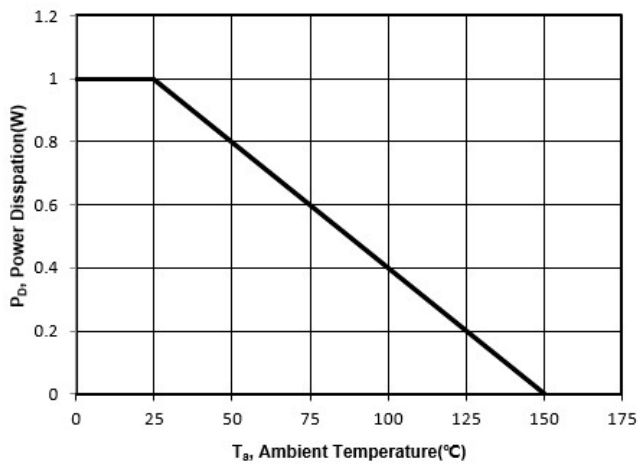
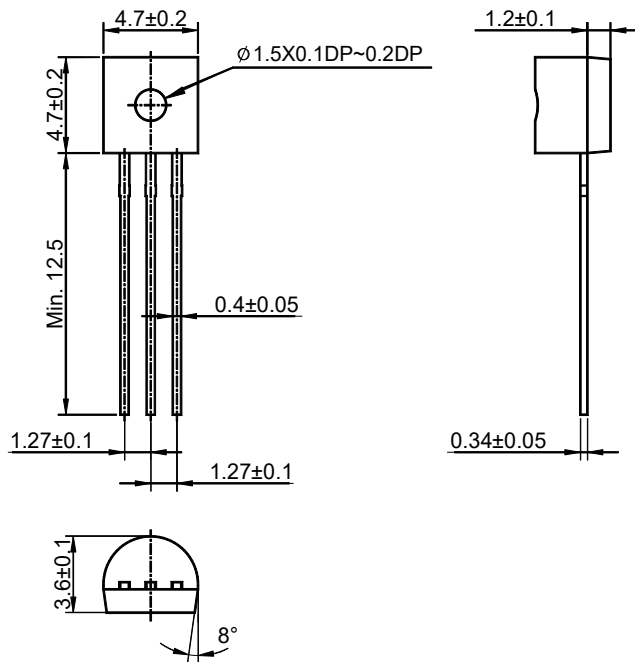


Fig 7. Power Derating Curve

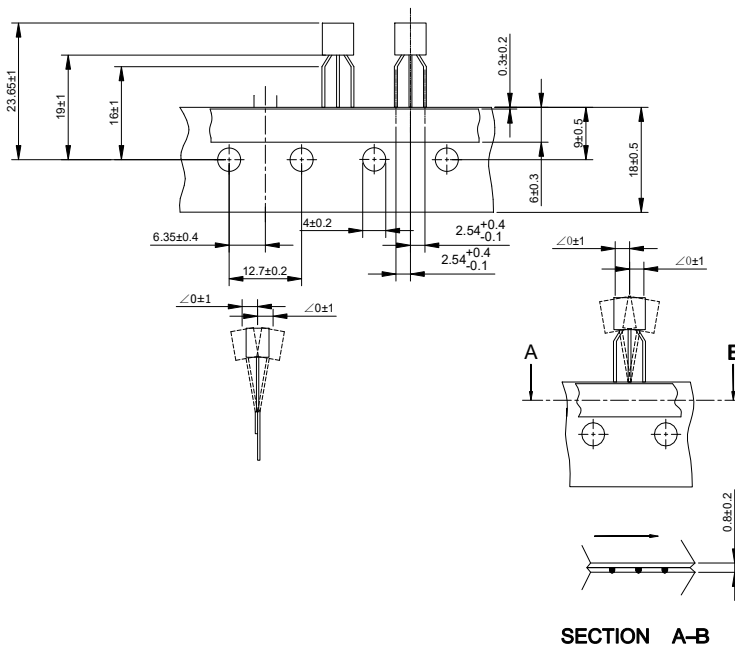


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## TO-92 Package Outline (Dimensions in millimeters)



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



## Packing information

Package	Bulk Packing			Ammo-Packing	
	Per Bag Qty	Per Box Qty	Per Carton Qty	Per Box Qty	Per Carton Qty
TO-92	1,000	5,000	50,000	4,000	20,000

