

NPN

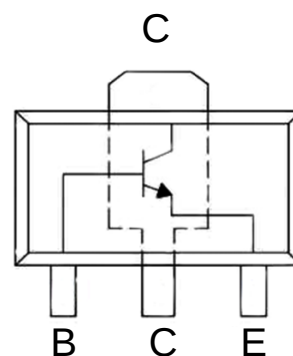
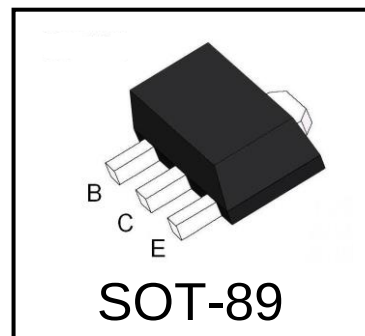
Plastic-Encapsulate Transistors

Features

- High breakdown Voltage
- High DC Current Gain
- Collector-base Voltage:160V

Application

- Package:SOT-89
- Complementary to with 2SA1013
- Marking: 2383



Circuit Diagram

Absolute Maximum Rating ($T_C=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	BV_{CBO}	160	V
Collector-Emitter Voltage	BV_{CEO}	160	V
Emitter-Base Voltage	BV_{EBO}	6	V
Collector Current	I_C	0.2	A
Collector Power Dissipation	P_C	0.5	W
Junction Temperature	T_j	150	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-55~150	$^{\circ}\text{C}$

Electrical Characteristics ($T_C=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Conditions	Value			Unit
			Min	Typ	Max	
Collector-base breakdown voltage	BV_{CBO}	$I_C = 100\mu\text{A}$, $I_E = 0$	160			V
Collector-emitter breakdown voltage	BV_{CEO}	$I_C = 1\text{mA}$, $I_B = 0$	160			V
Emitter-base breakdown voltage	BV_{EBO}	$I_E = 100\mu\text{A}$, $I_C = 0$	6			V
Collector cut-off current	I_{CEO}	$V_{CB} = 150\text{V}$, $I_B = 0$			0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 6\text{V}$, $I_C = 0$			0.1	μA
* DC current gain	h_{FE1}	$V_{CE} = 5\text{V}$, $I_C = 10\text{mA}$	60		320	
	h_{FE2}	$V_{CE} = 5\text{V}$, $I_C = 50\text{mA}$	30			
* Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 50\text{mA}$, $I_B = 5\text{mA}$			0.5	V
* Base-emitter saturation voltage	$V_{BE(on)}$	$V_{CE} = 5\text{V}$, $I_C = 10\text{mA}$			1.0	V
Transition frequency	f_T	$V_{CE} = 5\text{V}$, $I_C = 10\text{mA}$	20			MHz

* Pulse test: $PW \leq 300\mu\text{s}$, duty cycles $\leq 2\%$ Pulse

 h_{FE1} Classification

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

Typical Characteristics

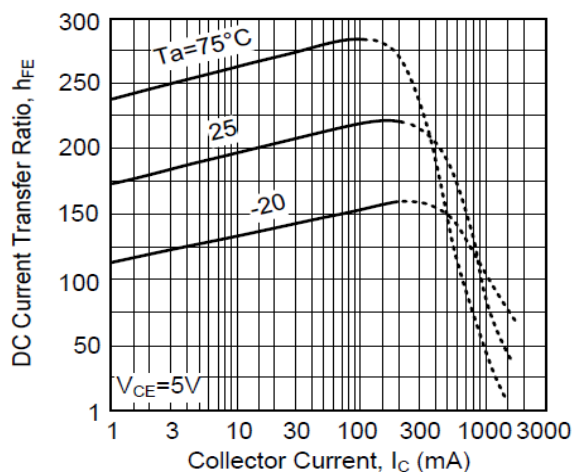


Figure 1. DC Current Transfer Ratio vs. Collector Current

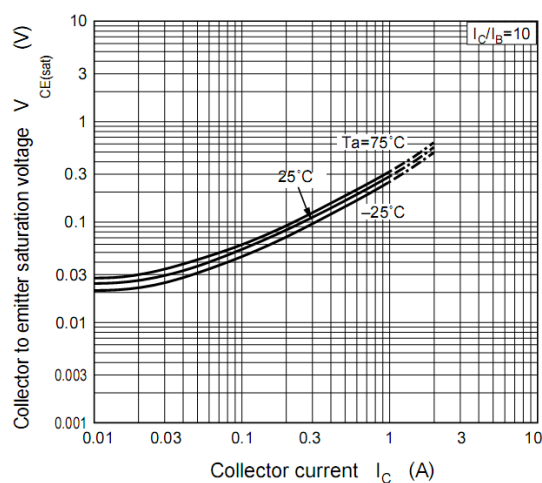


Figure 2. Collector to Emitter Saturation Voltage vs. Collector Current

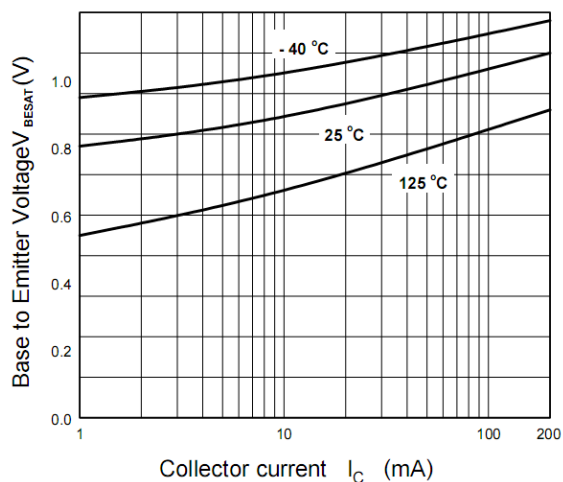


Figure 3. Base to Emitter Saturation Voltage vs. Collector Current

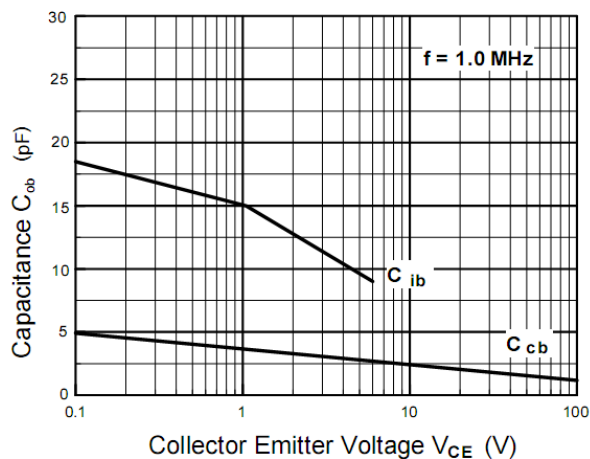


Figure 4. Input and Output Capacitance vs Reverse Voltage

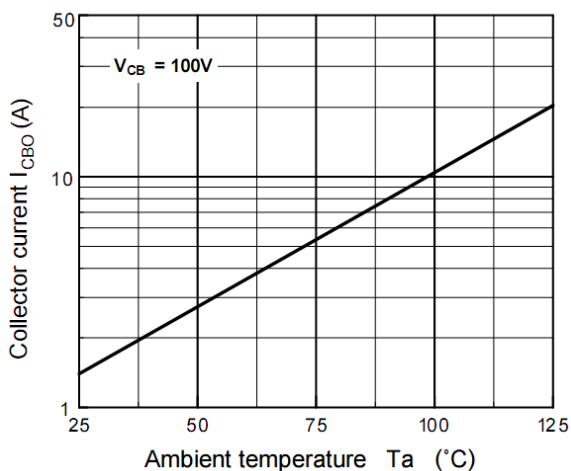


Figure 5. Collector Cutoff Current vs Ambient Temperature

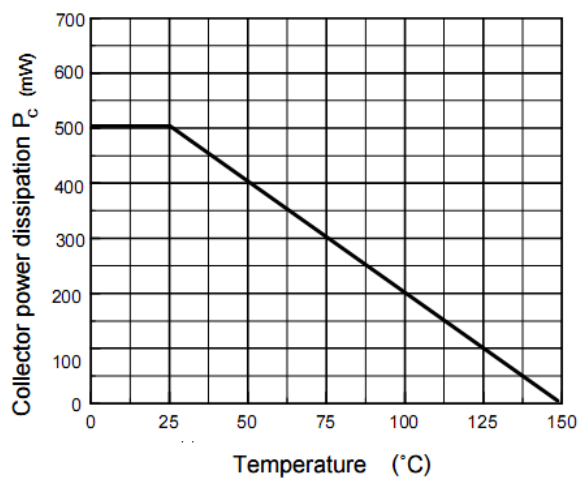
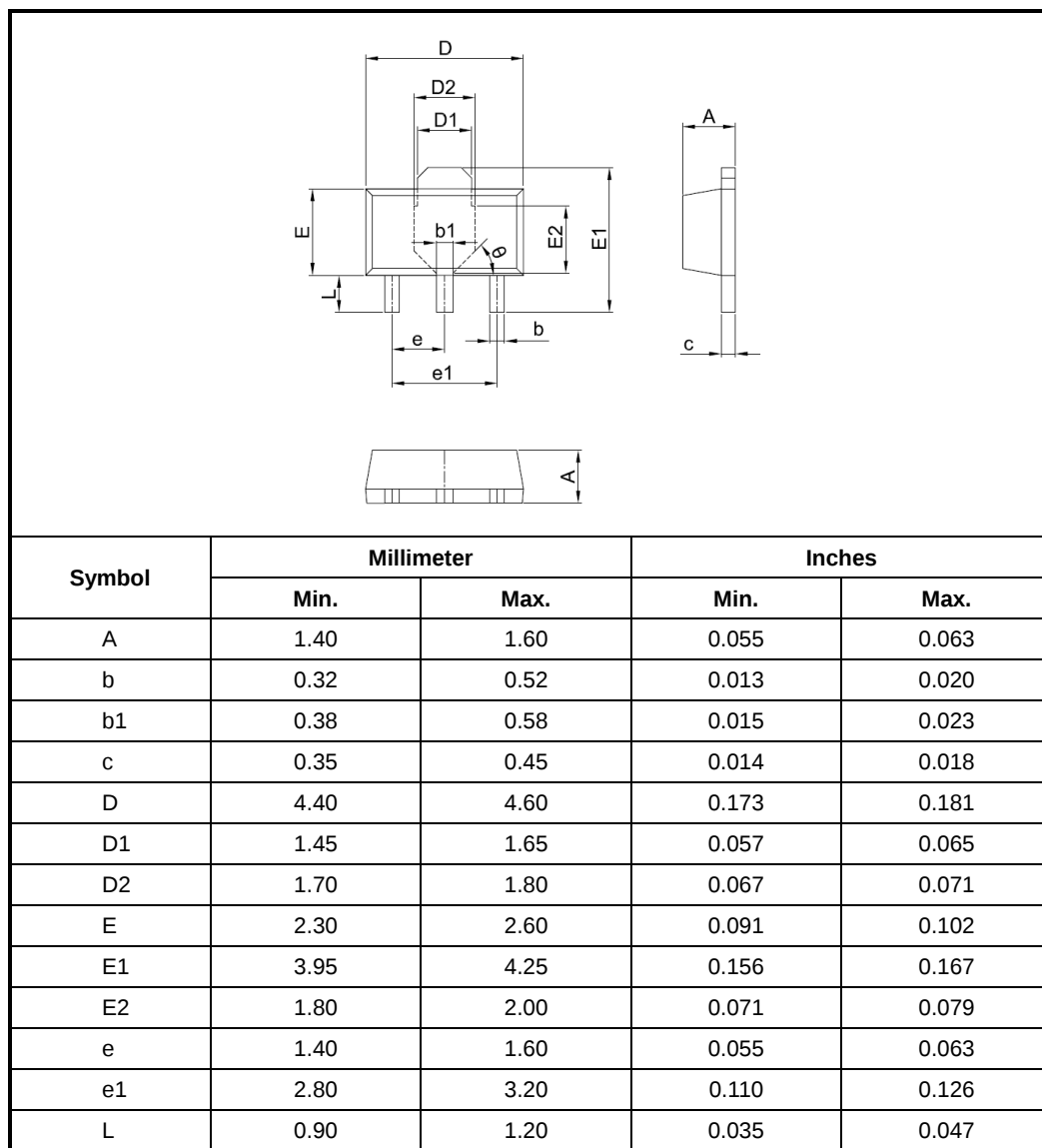


Figure 6. Power Dissipation vs Ambient Temperature

Package Dimensions



Suggested Pad Layout: (mm)

