

Applications

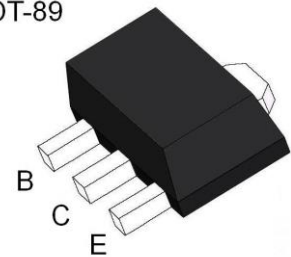
Electronic test equipment
Offline switching circuits
Piezo actuators
RCD circuits

Features

High breakdown voltage
Low collector-emitter saturation voltage

Device marking : P58

SOT-89



Absolute Maximum Ratings (Ta=25°C, unless otherwise specified.)

Parameter	Symbol	Value	Unit
Collector-base voltage	BV_{CBO}	-400	V
Collector-emitter voltage	BV_{CEO}	-400	V
Emitter-base voltage	BV_{EBO}	-7	V
Continuous collector current	I_C	-200	mA
Pulse collector current	I_{CM}	-500	mA
Power dissipation	P_D	1	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55~+150	°C

Thermal Characteristics

Parameter	Symbol	Value	Unit
Thermal resistance, Junction to Ambient	$R_{\theta JA}$	125	°C/W
Thermal resistance, Junction to Leads	$R_{\theta JL}$	10	°C/W

Notes: 1. For a device surface mounted on 15mm X 15mm FR4 PCB with high coverage of single sided 1 oz copper, in still air conditions; device measured when operating in steady state condition.

2. Thermal resistance from junction to solder-point (on the exposed collector pad).

Electrical Characteristics (Ta=25°C, unless otherwise specified.)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	BV_{CBO}	$I_C = -100\mu A, I_E = 0$	-400			V
Collector-emitter breakdown voltage	BV_{CEO}	$I_C = -1mA, I_B = 0$	-400			V
Emitter-base breakdown voltage	BV_{EBO}	$I_E = -100\mu A, I_C = 0$	-7			V
Collector cut-off current	I_{CBO}	$V_{CB} = -320V, I_E = 0$			-100	nA
Emitter cut off current	I_{CES}	$V_{CE} = -320V, V_{BE} = 0$			-100	nA
Emitter cut-off current	I_{EBO}	$V_{EB} = -5V, I_C = 0$			-100	nA
DC current gain	h_{FE}	$V_{CE} = -10V, I_C = -1mA$ $V_{CE} = -10V, I_C = -50mA$ $V_{CE} = -10V, I_C = -100mA$	100 100 15		300	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -20mA, I_B = -2mA$ $I_C = -50mA, I_B = -6mA$			-0.2 -0.5	V
Base-emitter saturation voltage	$V_{BE(on)}$	$V_{CE} = -10V, I_C = -50mA$			-0.9	V
Transition frequency	f_T	$V_{CE} = -20V, I_C = -10mA, f = 20MHz$	50			MHz
Output capacitance	C_{ob}	$V_{CB} = -20V, I_E = 0, f = 1MHz$			5	pF
Switching times	t_{on}	$I_C = -50mA, V_C = -100V$ $I_{B1} = -5mA, I_{B2} = 10mA$		95		ns
	t_{off}			1600		

Typical Characteristics

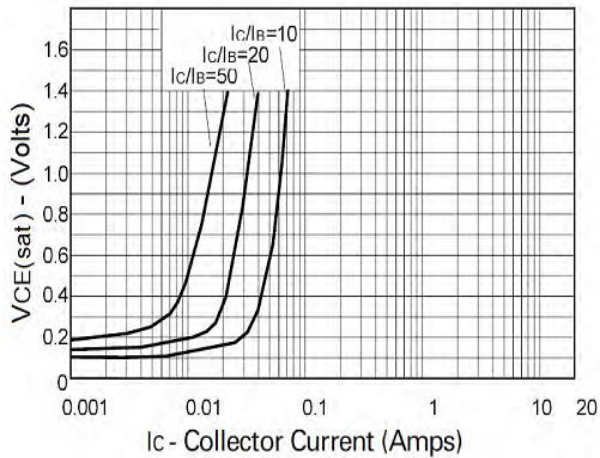


Figure 1. Collector-Emitter Saturation Voltage

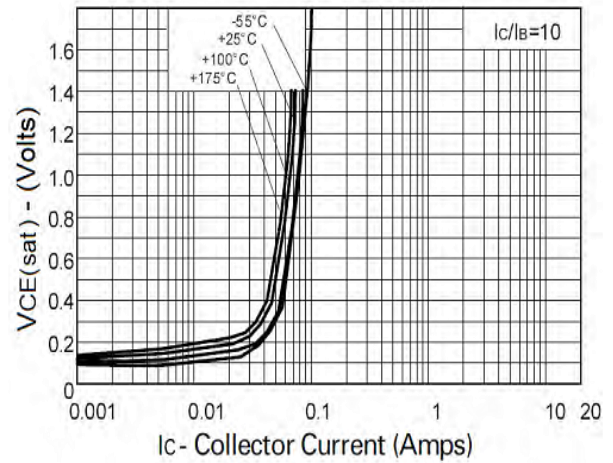


Figure 2. Collector-Emitter Saturation Voltage

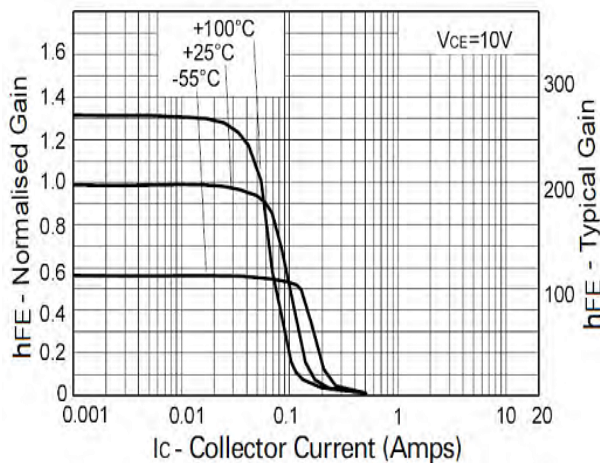


Figure 3. DC current Gain

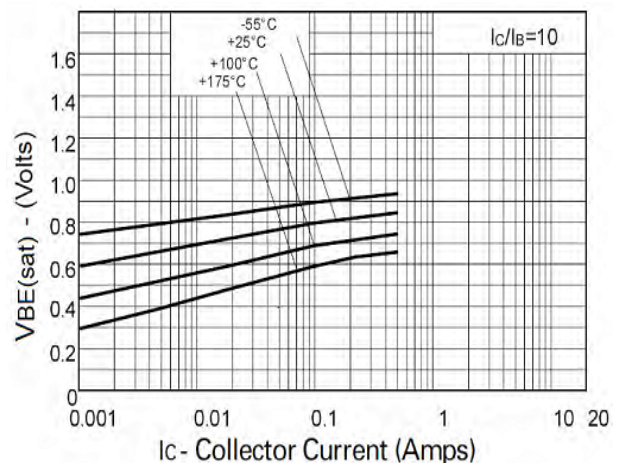


Figure 4. Base-Emitter Saturation Voltage

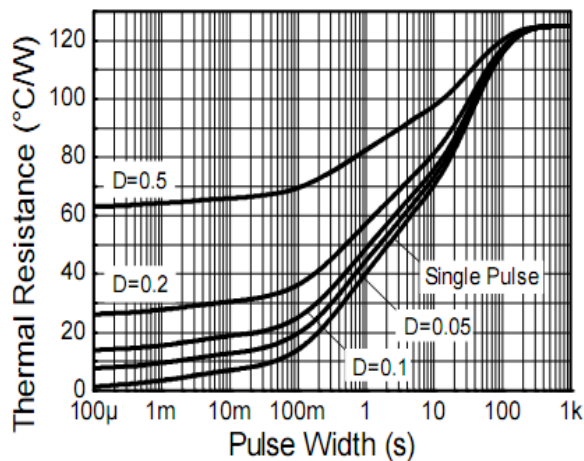


Figure 5. Transient Thermal Impedance

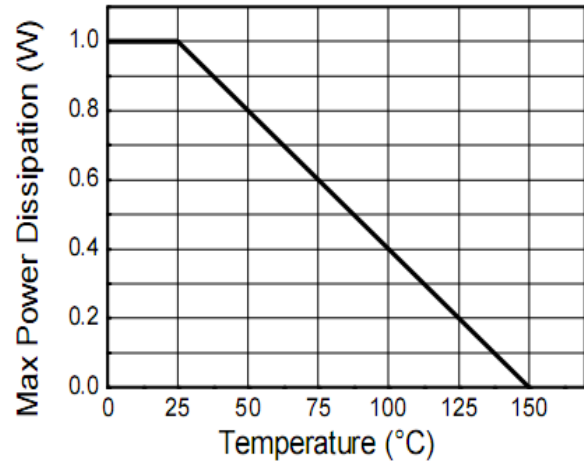
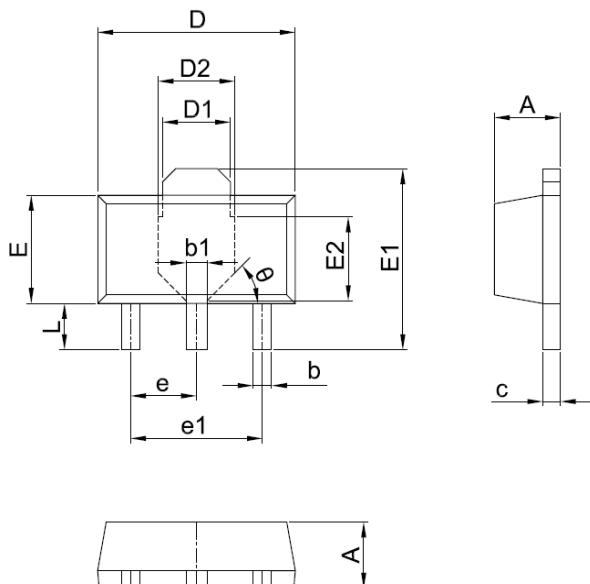


Figure 6. Power Dissipation

Package Dimensions



Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	1.40	1.60	0.055	0.063
b	0.32	0.52	0.013	0.020
b1	0.38	0.58	0.015	0.023
c	0.35	0.45	0.014	0.018
D	4.40	4.60	0.173	0.181
D1	1.45	1.65	0.057	0.065
D2	1.70	1.80	0.067	0.071
E	2.30	2.60	0.091	0.102
E1	3.95	4.25	0.156	0.167
E2	1.80	2.00	0.071	0.079
e	1.40	1.60	0.055	0.063
e1	2.80	3.20	0.110	0.126
L	0.90	1.20	0.035	0.047

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