

DATA SHEET

2SA1797

PNP GENERAL PURPOSE TRANSISTORS

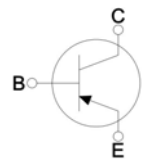
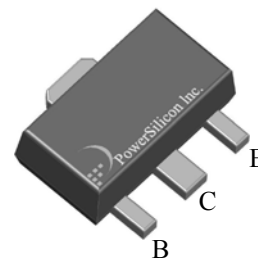
VOLTAGE -50 V CURRENT -3 A

FEATURES

- LOW SATURATION VOLTAGE:
 $V_{CE(SAT)} = -0.35V @ I_C/I_B = -1A/-50mA$
- EXCELLENT DC CURRENT GAIN
- PNP SILICON EPITAXIAL PLANAR TRANSISTOR FOR SWITCHING AND AMPLIFIER APPLICATIONS
- LEAD FREE AND HALOGEN-FREE

MECHANICAL DATA

- CASE: SOT-89 PACKAGE
- TERMINALS: SOLDERABLE PER MIL-STD-202G, METHOD 208
- APPROX. WEIGHT: 0.044 GRAMS



CASE: SOT-89

ABSOLUTE MAXIMUM RATINGS

AT $T_A = 25^\circ\text{C}$ UNLESS OTHERWISE SPECIFIED

PARAMETER	SYMBOL	VALUE	UNITS
COLLECTOR-EMITTER VOLTAGE	V_{CEO}	-50	V
COLLECTOR-BASE VOLTAGE	V_{CBO}	-50	V
EMITTER-BASE VOLTAGE	V_{EBO}	-6	V
CONTINUOUS COLLECTOR CURRENT	I_C	-3	A
PULSE COLLECTOR CURRENT	I_C	-6	A
COLLECTOR POWER DISSIPATION	P_D	500	mW
THERMAL RESISTANCE, JUNCTION TO AMBIENT	$R_{\theta JA}$	250	$^\circ\text{C/W}$
THERMAL RESISTANCE, JUNCTION TO CASE	$R_{\theta JC}$	70	$^\circ\text{C/W}$
JUNCTION TEMPERATURE	T_J	150	$^\circ\text{C}$
STORAGE TEMPERATURE RANGE	T_{STG}	-55 TO +150	$^\circ\text{C}$

NOTE:

1. Mounted on a 40x25x0.1 mm³ Copper plane.
2. $R_{\theta JA}$ is the sum of the junction-to-case and case-to-ambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins. $R_{\theta JC}$ is guaranteed by design while $R_{\theta CA}$ is determined by the user's board design. The value of $R_{\theta JA}$ is measured with device mounted on 1 in² FR-4 board with 2 oz copper.

ELECTRICAL CHARACTERISTICS

AT $T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED

PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNITS
OFF CHARACTERISTICS						
COLLECTOR-EMITTER BREAKDOWN VOLTAGE	$I_C = -1\text{mA}, I_B = 0$	$V_{(BR)CEO}$	-50	-	-	V
COLLECTOR-BASE BREAKDOWN VOLTAGE	$I_C = -50\mu\text{A}, I_E = 0$	$V_{(BR)CBO}$	-50	-	-	V
EMITTER-BASE BREAKDOWN VOLTAGE	$I_E = -50\mu\text{A}, I_C = 0$	$V_{(BR)EBO}$	-6	-	-	V
COLLECTOR CUT-OFF CURRENT	$V_{CB} = -50\text{V}, I_E = 0$	I_{CBO}	-	-	-0.1	μA
EMITTER CUT-OFF CURRENT	$V_{EB} = -5\text{V}, I_C = 0$	I_{EBO}	-	-	-0.1	μA
ON CHARACTERISTICS						
DC CURRENT GAIN	$I_C = -500\text{mA}, V_{CE} = -2\text{V}$	h_{FE}	82	-	270	-
COLLECTOR-EMITTER SATURATION VOLTAGE	$I_C = -1\text{A}, I_B = -50\text{mA}$	$V_{CE(SAT)}$	-	-	-0.35	V
SMALL-SIGNAL CHARACTERISTICS						
COLLECTOR OUTPUT CAPACITANCE	$V_{CB} = -10\text{V}, I_E = 0, f = 1.0\text{MHz}$	C_{ob}	-	36	-	pF
TRANSITION FREQUENCY	$I_E = 500\text{mA}, V_{CE} = -2\text{V}, f = 100\text{MHz}$	f_T	-	200	-	MHz

ORDERING AND MARKING INFORMATION

PART NUMBER	PACKAGE	SHIPPING	MARKING CODE
2SA1797-▲-T89R	SOT-89	TAPE REEL	AG▲

NOTE:

- ▲: RANK OF h_{FE} , SEE CLASSIFICATION OF h_{FE}

CLASSIFICATION OF h_{FE}

RANK	P	Q
RANGE	82~180	120~270

TYPICAL PERFORMANCE CHARACTERISTICS

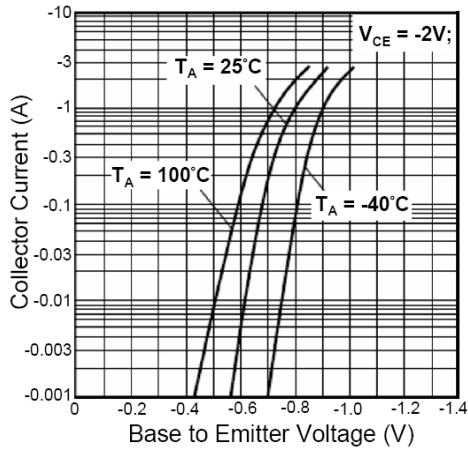


Figure 1: Grounded Emitter Propagation Characteristics

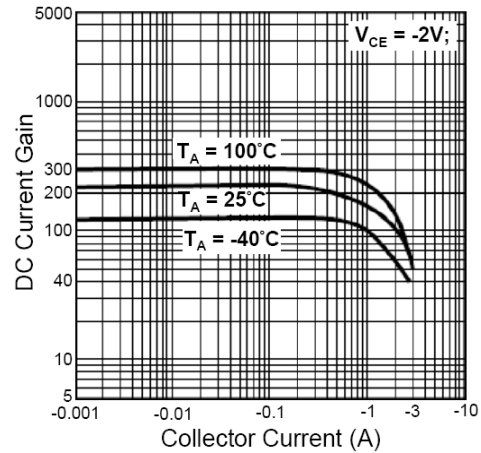


Figure 2: DC Current Gain vs. Collector Current

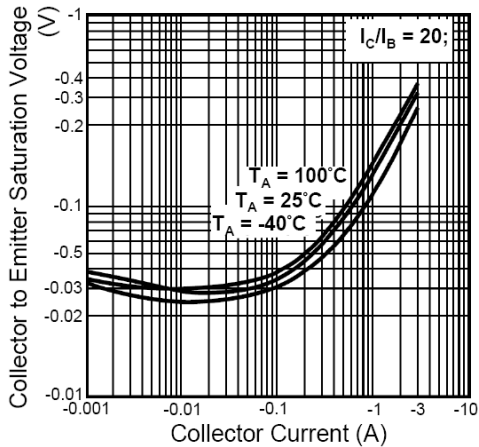


Figure 3: Collector-Emitter Saturation Voltage vs. Collector Current

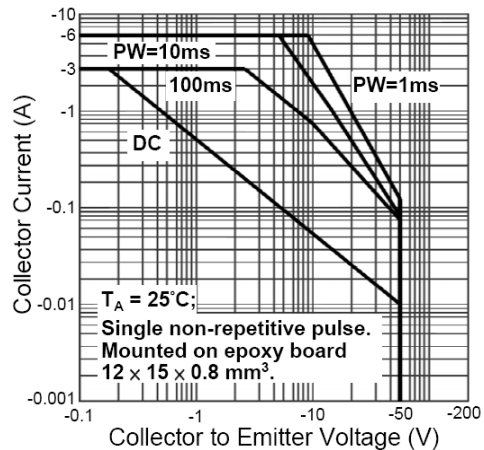
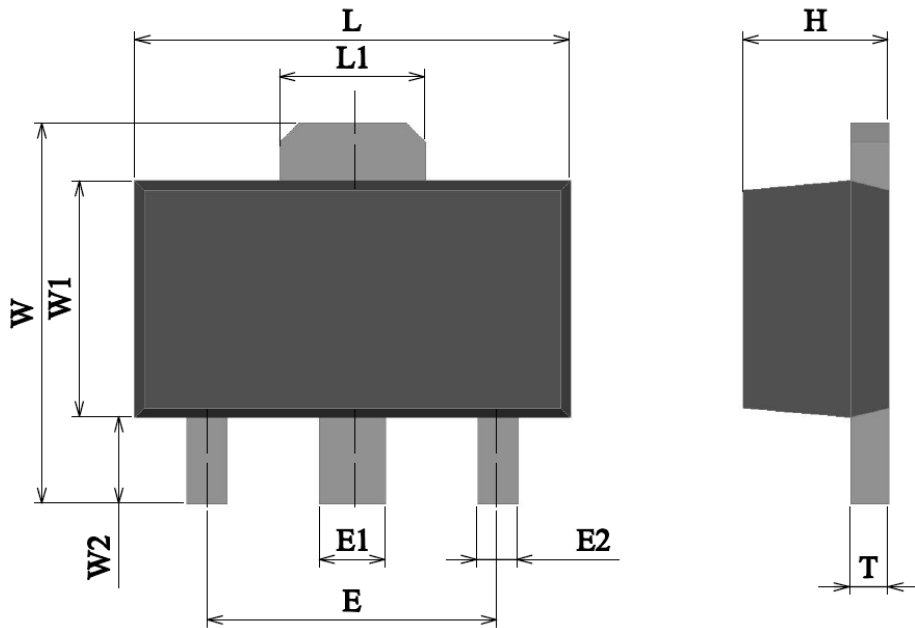


Figure 4: Safe Operating Area

SOT-89 DIMENSION



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
L	4.40	4.70	0.173	0.185
L1	1.55	1.75	0.061	0.069
E	3.00 TYP		0.118 TYP	
E1	0.40	0.58	0.016	0.023
E2	0.32	0.52	0.013	0.020
W	3.94	4.25	0.155	0.167
W1	2.30	2.60	0.091	0.102
W2	0.90	1.20	0.035	0.047
H	1.45	1.60	0.057	0.063
T	0.35	0.44	0.014	0.017