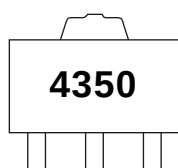


SOT-89 Plastic-Encapsulate Transistors TRANSISTOR (NPN)

FEATURES

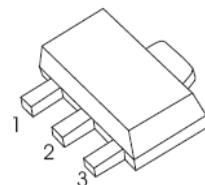
- Low collector-emitter saturation voltage V_{CEsat}
- High collector current capability: I_C and I_{CM}

MARKING



SOT-89-3L

1. BASE
2. COLLECTOR
3. EMITTER



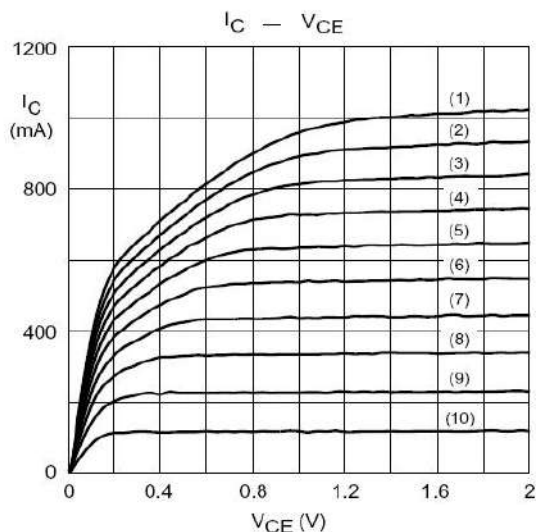
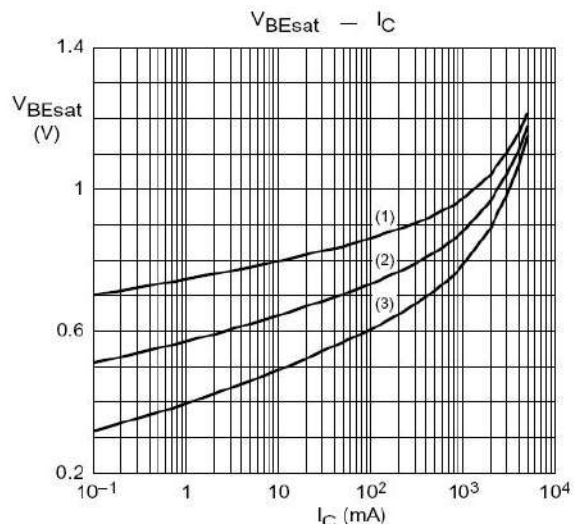
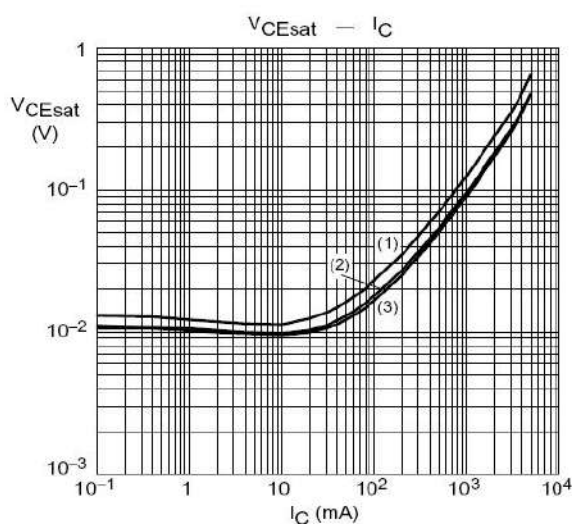
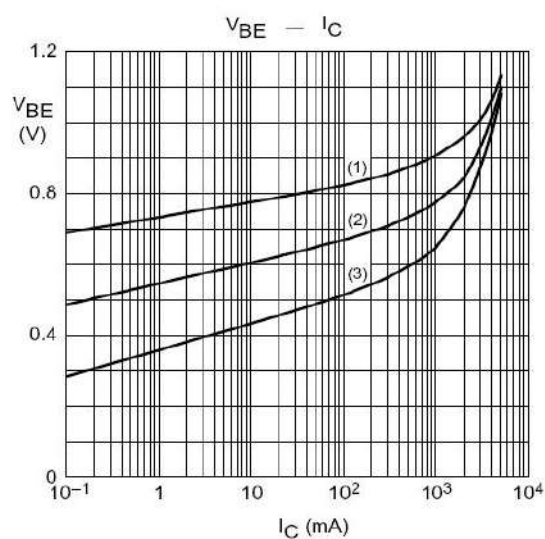
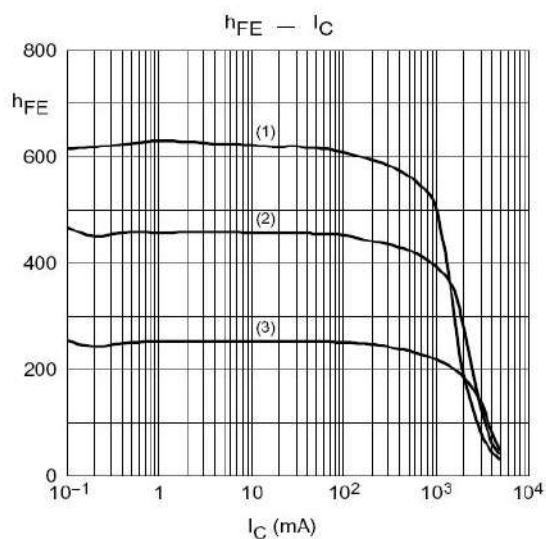
MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	50	V
V_{CEO}	Collector-Emitter Voltage	50	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	3	A
P_C	Collector Power Dissipation	550	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	250	$^{\circ}\text{C}/\text{W}$
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	$^{\circ}\text{C}$

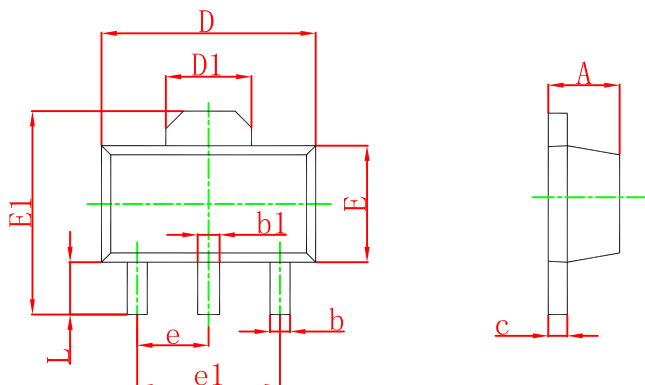
ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cut-Off Current	I_{CBO}	$V_{CB}=50V$ $I_E=0$			100	nA
Collector Cut-Off Current	I_{CBO}	$V_{CB}=50V$ $I_E=0$ $T_j=150^\circ\text{C}$			50	μA
Collector Cut-Off Current	I_{CES}	$V_{CE}=50V$ $V_{BE}=0$			100	nA
Emitter Base Cut-Off Current	I_{EBO}	$V_{EB}=5.0V$ $I_C=0$			100	nA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=2.0V$ $I_C=0.1A$	300			
	$h_{FE(2)}$	$V_{CE}=2.0V$ $I_C=0.5A$	300			
	$h_{FE(3)*}$	$V_{CE}=2.0V$ $I_C=1.0A$	300		700	
	$h_{FE(4)*}$	$V_{CE}=2.0V$ $I_C=2.0A$	200			
	$h_{FE(5)*}$	$V_{CE}=2.0V$ $I_C=3.0A$	100			
Collector to Emitter Saturation Voltage	$V_{CE(sat) (1)}$	$I_C=0.5A$ $I_B=50mA$			80	mV
	$V_{CE(sat) (2)}$	$I_C=2.0A$ $I_B=100mA$			280	mV
Equivalent On-Resistance	$R_{CE(sat)*}$	$I_C=2.0A$ $I_B=200mA$		100	130	$m\Omega$
Base to Emitter Saturation Voltage	$V_{BE(sat) (1)}$	$I_C=2.0A$ $I_B=100mA$			1.1	V
	$V_{BE(sat) (2)*}$	$I_C=3.0A$ $I_B=300mA$			1.2	V
Base-Emitter Turn-On Voltage	$V_{BE(ON)}$	$V_{CE}=2.0V$ $I_C=1.0A$			1.1	V
Transition Frequency	f_T	$V_{CE}=5.0V$ $I_C=100mA$ $f=100MHz$	100			MHz
Collector Capacitance	C_C	$V_{CB}=10V$ $I_E=0$ $f=1.0MHz$			25	pF

Typical Characteristics

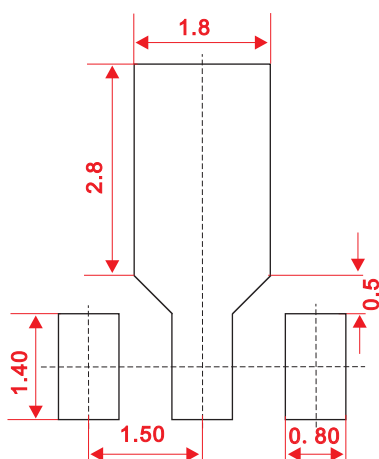


SOT-89-3L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF.		0.061 REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP.		0.060 TYP.	
e1	3.000 TYP.		0.118 TYP.	
L	0.900	1.200	0.035	0.047

SOT-89-3L Suggested Pad Layout

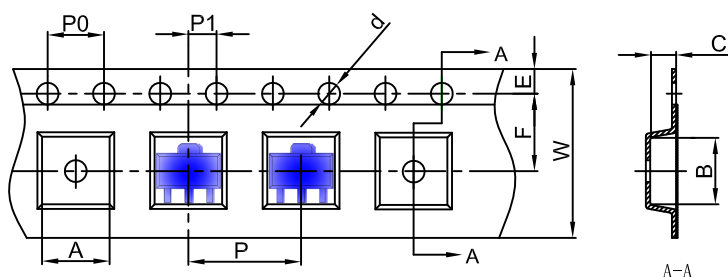


Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

SOT-89-3L Tape and Reel

SOT-89-3L Embossed Carrier Tape

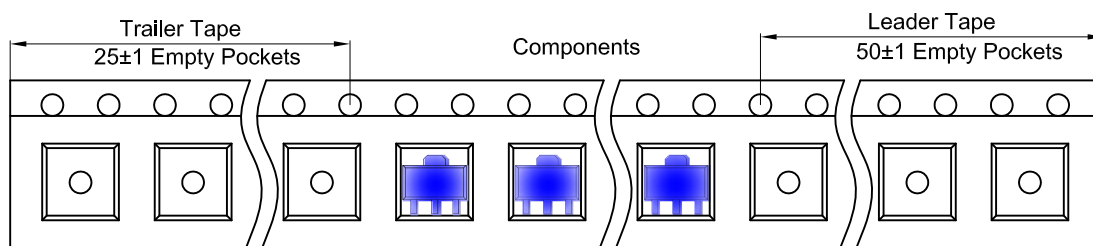


Packaging Description:

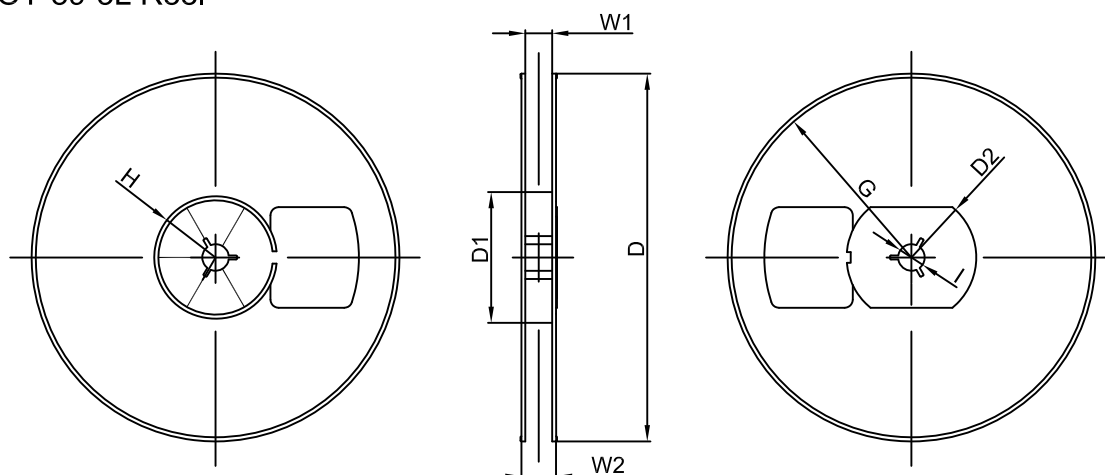
SOT-89-3L parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 1,000 units per 7" or 18.0 cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter											
Pkg type	A	B	C	d	E	F	P0	P	P1	W	
SOT-89-3L	4.85	4.45	1.85	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00	

SOT-89-3L Tape Leader and Trailer



SOT-89-3L Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø180.00	60.00	R32.00	R86.50	R30.00	Ø13.00	13.20	16.50