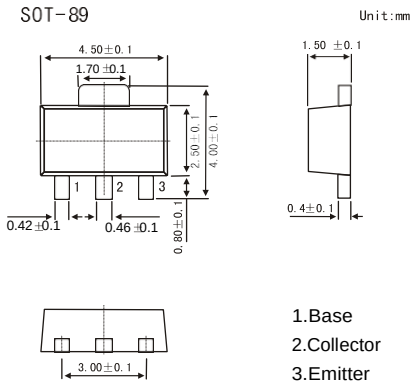
SOT-89-3L Plastic-Encapsulate Transistors

NPN Transistors



1.Base
2.Collector
3.Emitter

Features:

- Low noise and high gain
- High power gain
- Large P_{tot}
- Pb−Free Package May be Available. The G−Suffix Denotes a Pb−Free Lead Finish

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	20	V
Collector - Emitter Voltage	V_{CEO}	12	
Emitter - Base Voltage	V_{EBO}	3	
Collector Current - Continuous	I_C	100	mA
Collector Power Dissipation	P_C	1.2	W
Junction to Ambient Resistance	$R_{th\ (j-a)}$	62.5	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-55 to 150	

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	I_C= 100 μA, I_E= 0	20			V
Collector- emitter breakdown voltage	V_{CEO}	I_C= 1 mA, I_B= 0	12			
Emitter - base breakdown voltage	V_{EBO}	I_E= 100 μA, I_C= 0	3			
Collector-base cut-off current	I_{CBO}	V_{CB}= 20V , I_E= 0			1	uA
Emitter cut-off current	I_{EBO}	V_{EB}= 3V , I_C=0			1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=50 mA, I_B=5mA			0.4	V
Base - emitter saturation voltage	$V_{BE(sat)}$	I_C=50 mA, I_B=5mA			1.2	
DC current gain (Note.1)	h_{FE}	V_{CE}= 10V, I_C= 20mA	50		250	
Insertion Power Gain	$\|S_{21e}\|^2$	V_{CE} = 10V, I_C = 20mA, f= 1GHz		9		dB
Noise Figure	NF	V_{CE} = 10V, I_C = 7mA, f= 1GHz		1.1		
		V_{CE} = 10V, I_C = 40mA, f= 1GHz		1.8	3	
Reverse Transfer Capacitance	C_{re}	V_{CB}= 10V, I_E= 0,f=1MHz			1	pF
Transition frequency	f_T	V_{CE}= 10V, I_C= 20mA		6.5		GHz

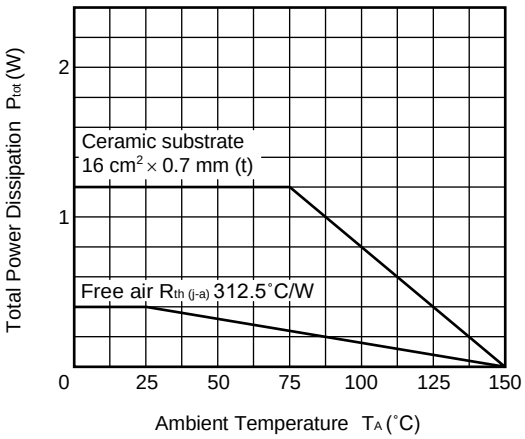
Note.1: Pulse measurement: PW ≤ 350 us, Duty Cycle ≤ 2%

■ Classification of h_{fe}

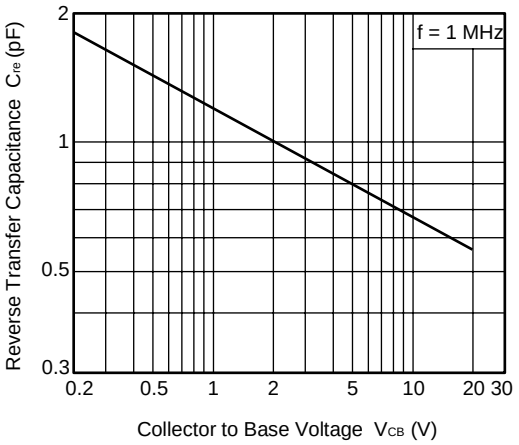
Type	2SC3357-H	2SC3357-F	2SC3357-E
Range	50-100	80-160	125-250
Marking	RH	RF	RE

■ Typical Characterisitics

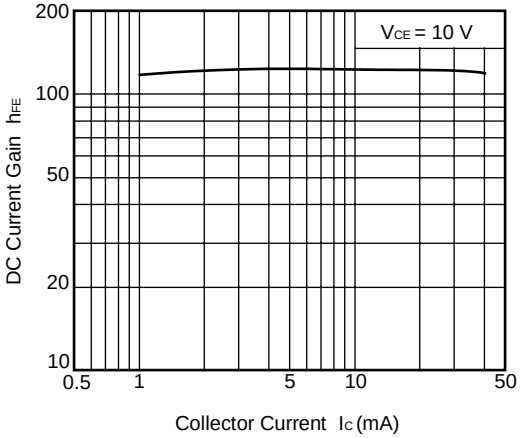
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



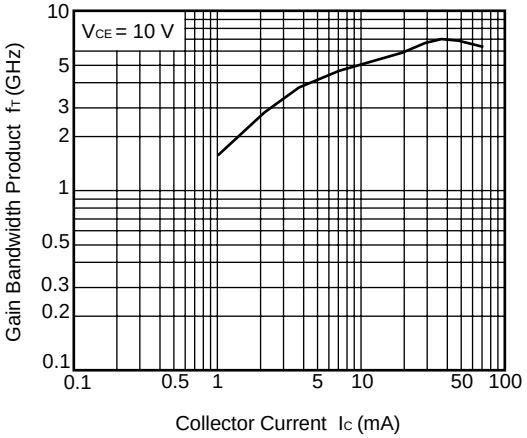
REVERSE TRANSFER CAPACITANCE vs. COLLECTOR TO BASE VOLTAGE



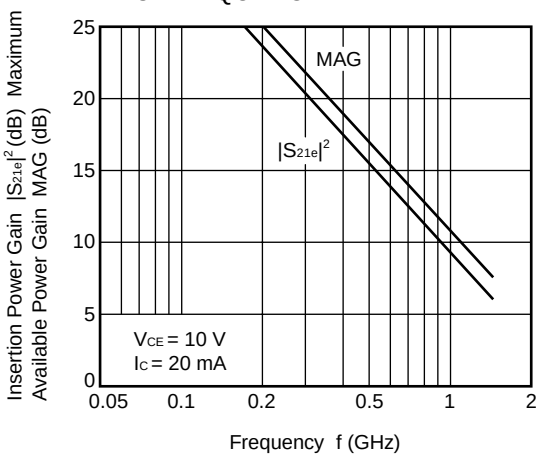
DC CURRENT GAIN vs. COLLECTOR CURRENT



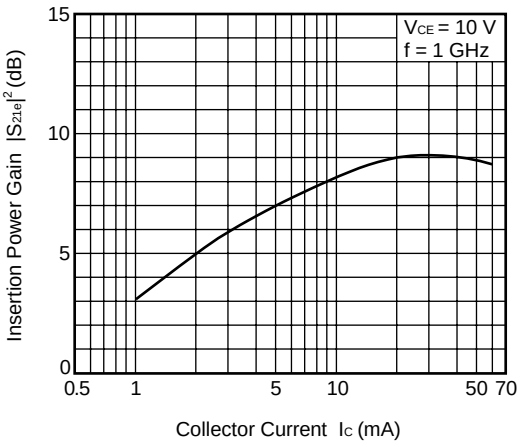
GAIN BANDWIDTH PRODUCT vs. COLLECTOR CURRENT



INSERTION POWER GAIN, MAG vs. FREQUENCY

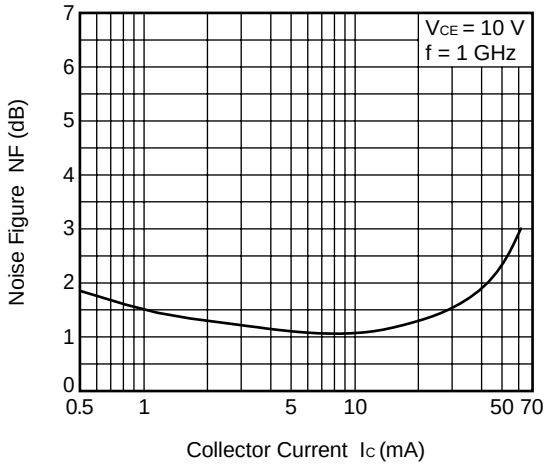


INSERTION POWER GAIN vs. COLLECTOR CURRENT

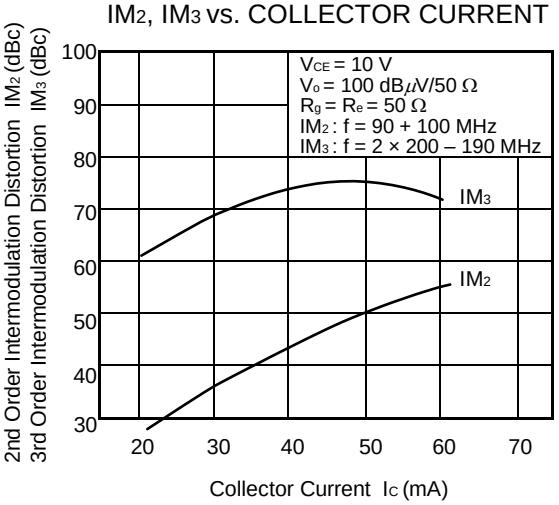


■ Typical Characterisitics

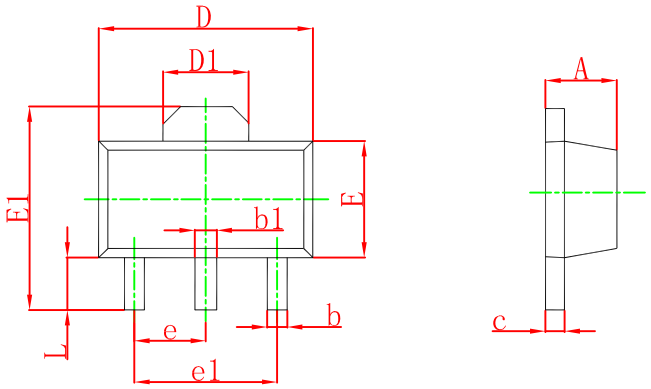
NOISE FIGURE vs.
COLLECTOR CURRENT



IM_2, IM_3 vs. COLLECTOR CURRENT

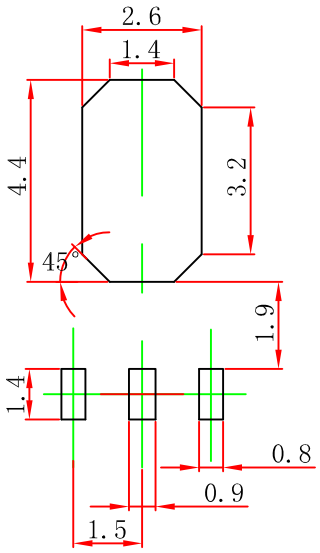


SOT-89-3L Package Outline Dimensions



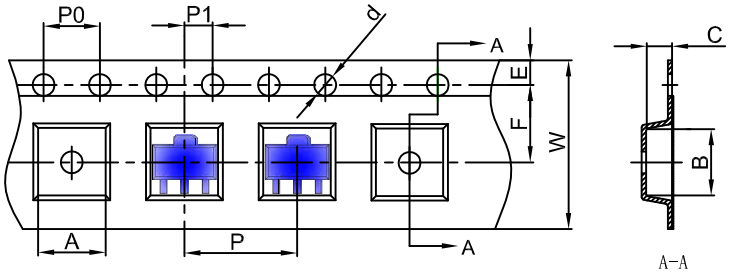
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF.		0.061 REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP.		0.060 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:±0.05mm.
3.The pad layout is for reference purposes only.

SOT-89-3L Embossed Carrier Tape

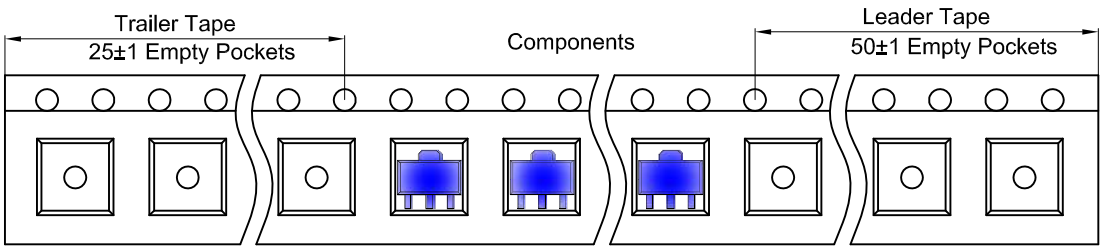


Packaging Description:

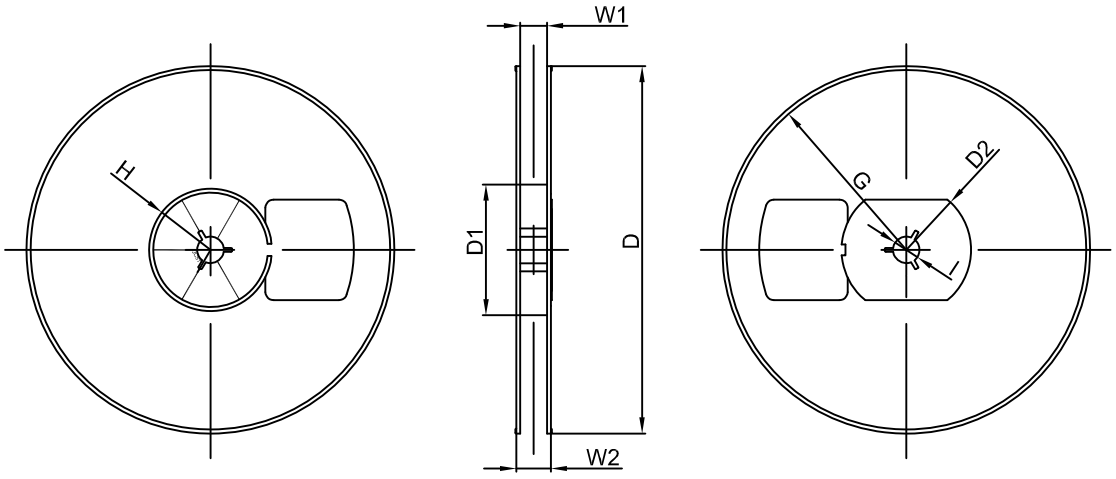
SOT-89-3L parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts 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

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
1000 pcs	7 inch	10,000 pcs	203×203×195	40,000 pcs	438×438×220	