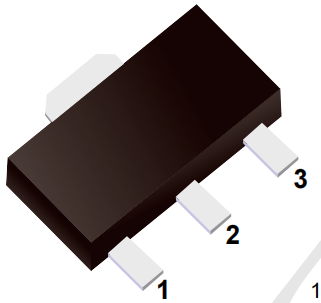
TP2SC3357

NPN Plastic Encapsulated Transistor

FEATURES

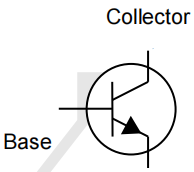
- Low Noise and High Gain
- High Power Gain

Product-Rank	
Range	125~250
Marking	RE



SOT89

1.Base
2.Collector
3.Emitter



MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

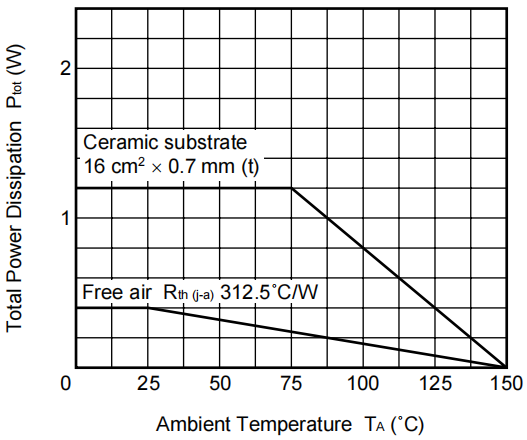
Parameter	Symbol	Ratings	Unit
Collector-Base Voltage	V_{CBO}	20	V
Collector-Emitter Voltage	V_{CEO}	12	
Emitter-Base Voltage	V_{EBO}	3	
Collector Current	I_C	0.1	A
Collector Power Dissipation	P_C	1.2	W
Thermal Resistance from Junction-Ambient	$R_{\theta JA}$	625	℃/W
Junction & Storage Temperature	T_J, T_{STG}	150, -55~150	℃

ELECTRICAL CHARACTERISTICS(T_a=25℃ unless otherwise specified)

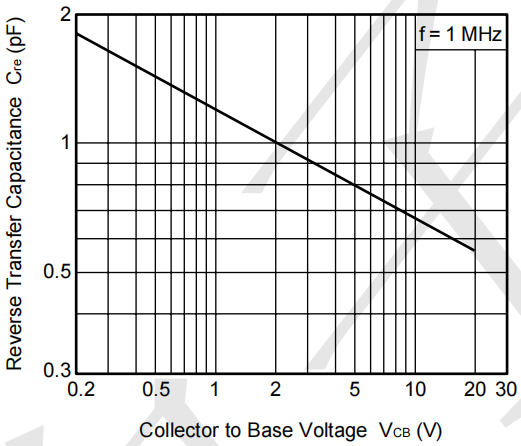
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	I_C= 100 μA， I_E= 0	20			V
Collector- emitter breakdown voltage	V_{CEO}	I_C= 1 mA， I_B= 0	12			
Emitter - base breakdown voltage	V_{EBO}	I_E= 100 μ A， I_C= 0	3			
Collector-base cut-off current	I_{CBO}	V_{CB}= 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

Typical Electrical and Thermal Characteristics

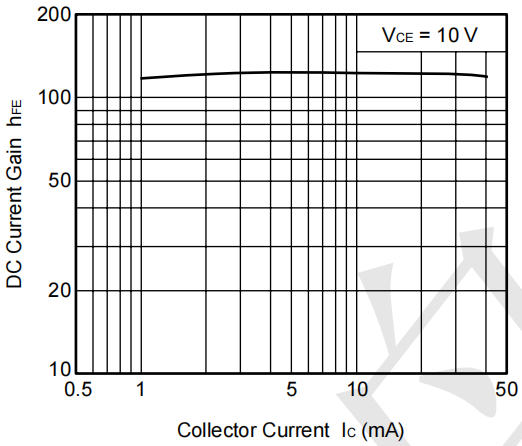
TOTAL POWER DISSIPATION
vs. AMBIENT TEMPERATURE



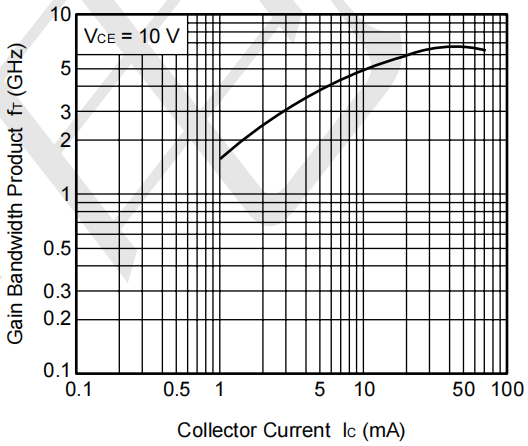
REVERSE TRANSFER CAPACITANCE
vs. COLLECTOR TO BASE VOLTAGE



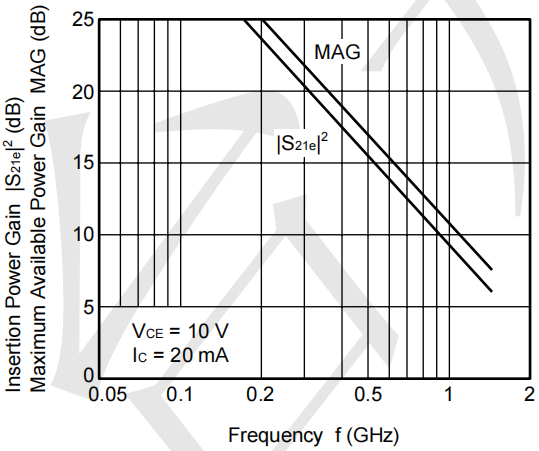
DC CURRENT GAIN vs.
COLLECTOR CURRENT



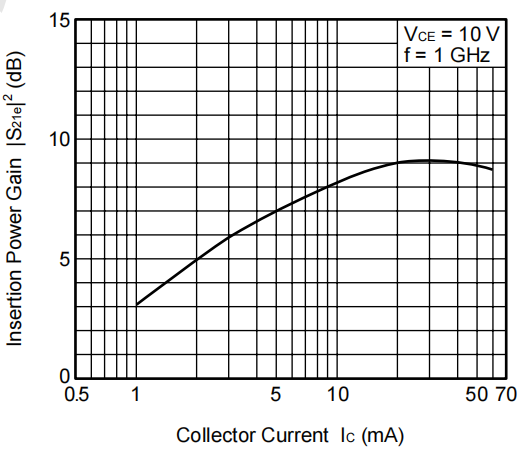
GAIN BANDWIDTH PRODUCT
vs. COLLECTOR CURRENT



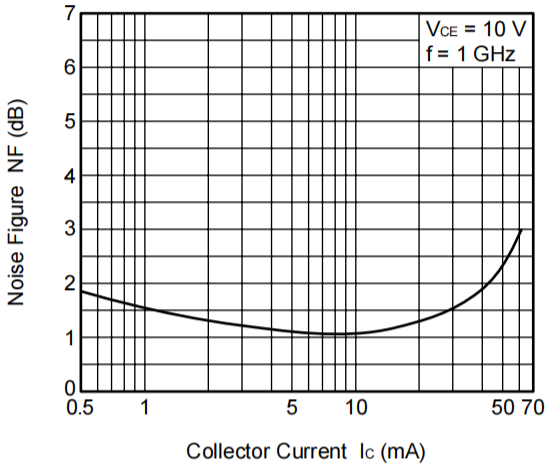
INSERTION POWER GAIN, MAG
vs. FREQUENCY



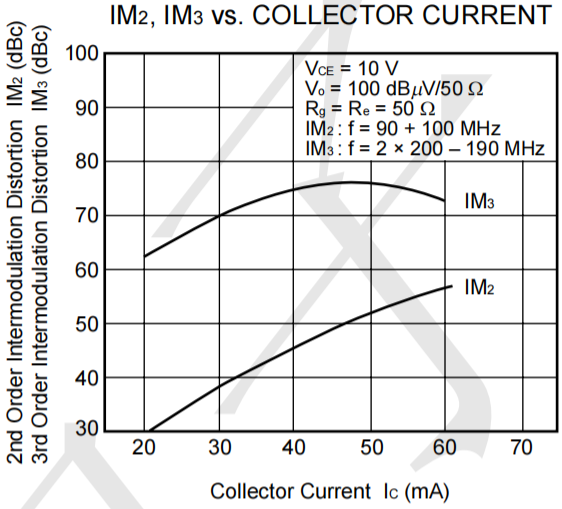
INSERTION POWER GAIN
vs. COLLECTOR CURRENT



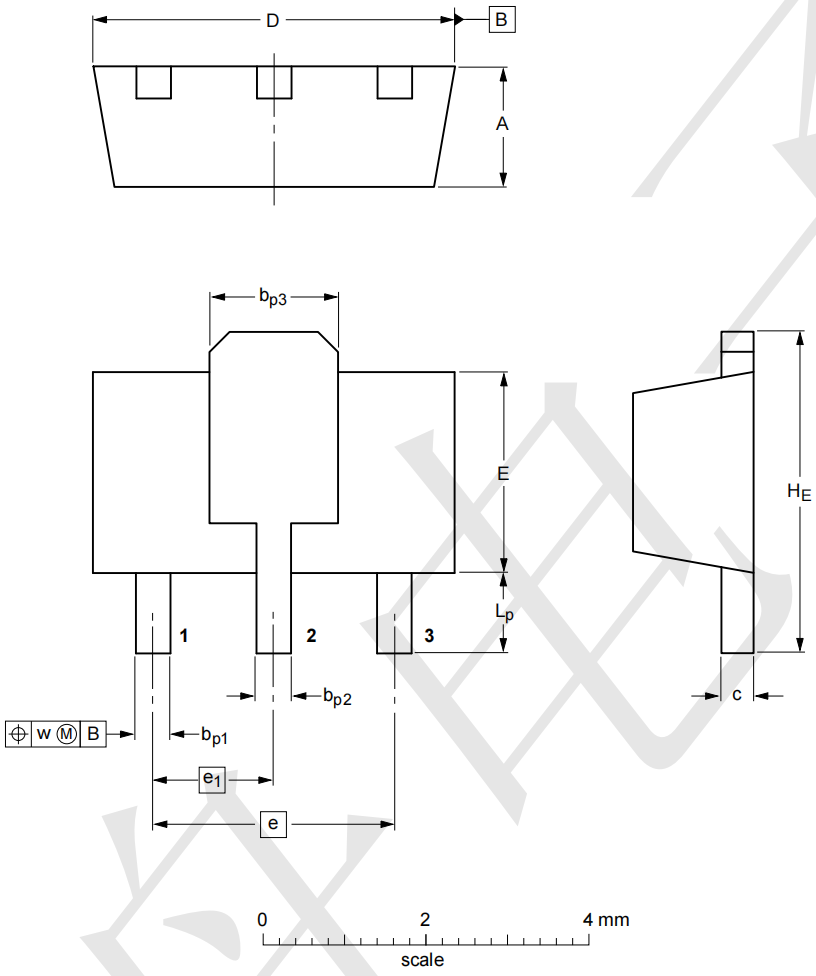
NOISE FIGURE vs.
COLLECTOR CURRENT



IM2, IM3 vs. COLLECTOR CURRENT



Package Outline Dimensions (SOT-23)



DIMENSIONS (mm are the original dimensions)

UNIT	A	b_{p1}	b_{p2}	b_{p3}	c	D	E	e	e_1	H_E	L_p	w
mm	1.6 1.4	0.48 0.35	0.53 0.40	1.8 1.4	0.44 0.23	4.6 4.4	2.6 2.4	3.0	1.5	4.25 3.75	1.2 0.8	0.13

Notes

1. All dimensions are in millimeters.
2. Tolerance ±0.10mm (4 mil) unless otherwise specified
3. Package body sizes exclude mold flash and gate burrs. Mold flash at the non-lead sides should be less than 5 mils.