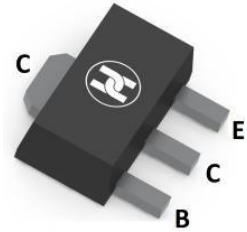
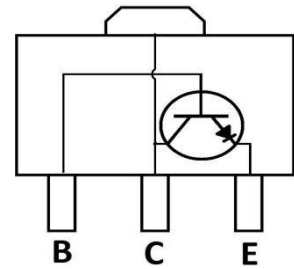


NPN Silicon Epitaxial Transistor
FEATURES

- High collector to emitter voltage: $V_{CEO} > 120V$.


SOT-89

MECHANICAL DATA

- Case: SOT-89
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Weight: 0.055 grams (approximate)

MAXIMUM RATINGS ($T_A = 25^\circ C$ unless otherwise noted)

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	120	V
Collector-emitter voltage	V_{CEO}	120	V
Emitter-base voltage	V_{EBO}	5	V
Collector current	I_C	0.7	A
Collector current (pulse) *	$I_{C(pu)}$	1.2	A
Collector power dissipation	P_c	2	W
Junction temperature	T_j	150	$^\circ C$
Storage temperature	T_{stg}	-55 to +150	$^\circ C$

*. $PW \leq 10ms$, duty cycle $\leq 50\%$

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ C$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Base-emitter voltage*	V_{BE}	$V_{CE} = 10V, I_C = 10mA$	550	620	650	mV
Collector cutoff current	I_{CBO}	$V_{CB} = 120V, I_E = 0$			100	nA
Emitter cutoff current	I_{EBO}	$V_{EB} = 5V, I_C = 0$			100	nA
DC current gain*	h_{FE}	$V_{CE} = 1V, I_C = 5.0mA$	45	200		
		$V_{CE} = 1V, I_C = 100mA$	90	200	400	
Collector-emitter saturation voltage*	$V_{CE(sat)}$	$I_C = 500mA, I_B = 50mA$		0.3	0.6	V
Base-emitter saturation voltage*	$V_{BE(sat)}$	$I_C = 500mA, I_B = 50mA$		0.9	1.5	V
Output capacitance	C_{ob}	$V_{CB} = 10V, I_E = 0, f = 1.0MHz$		10		pF
Transition frequency	f_T	$V_{CE} = 10V, I_E = -10mA$		90		MHz

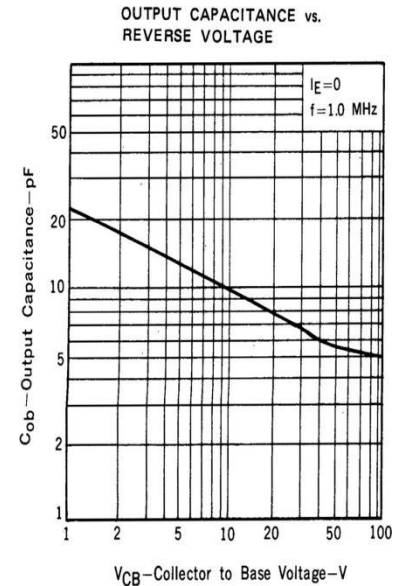
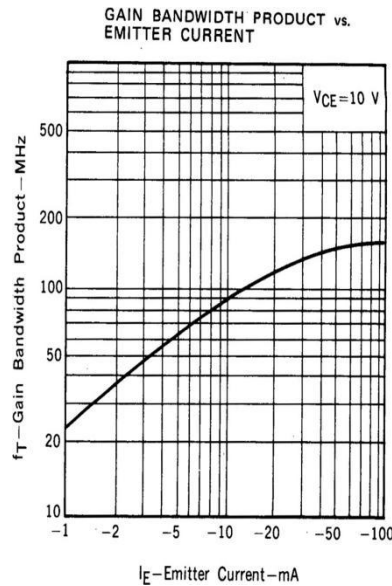
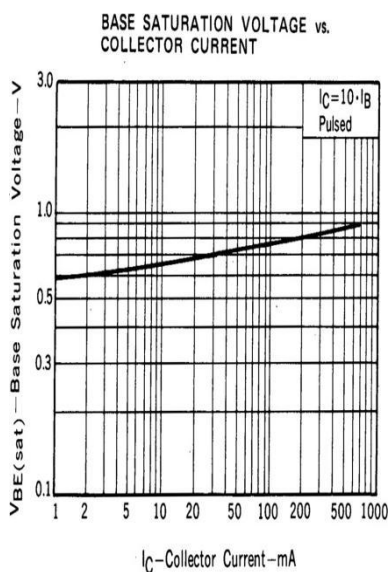
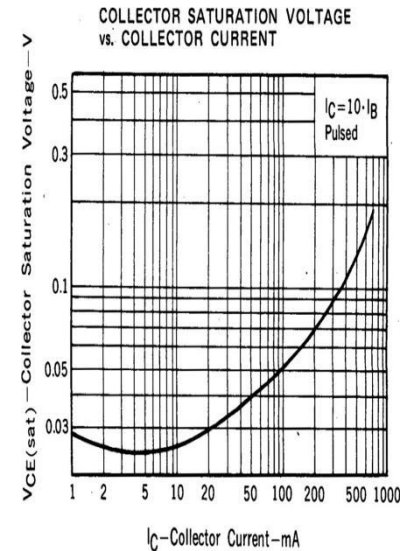
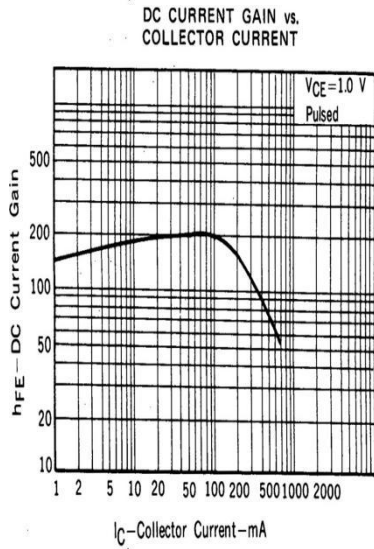
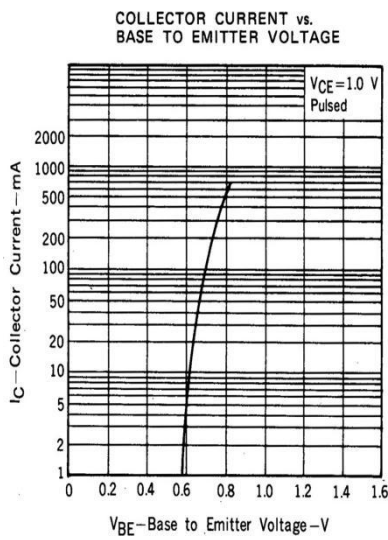
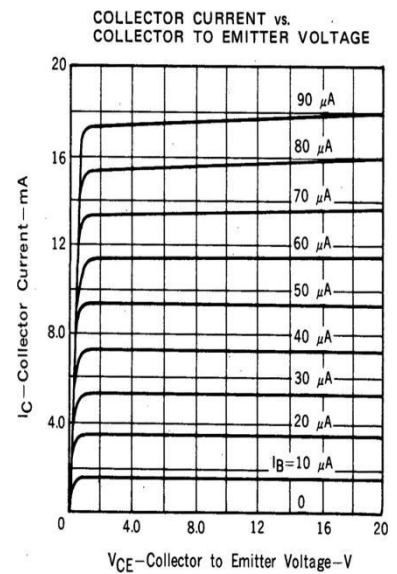
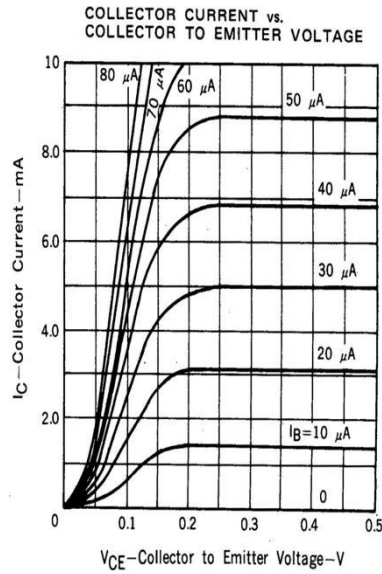
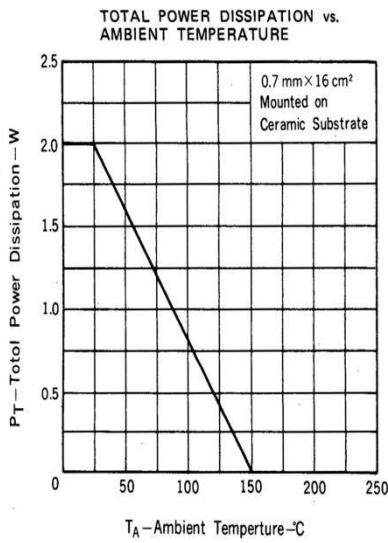
*. $PW \leq 350\mu s$, duty cycle $\leq 2\%$

CLASSIFICATION OF h_{FE}

Marking	HR	HQ	HP
h_{FE}	90~180	135~270	200~400

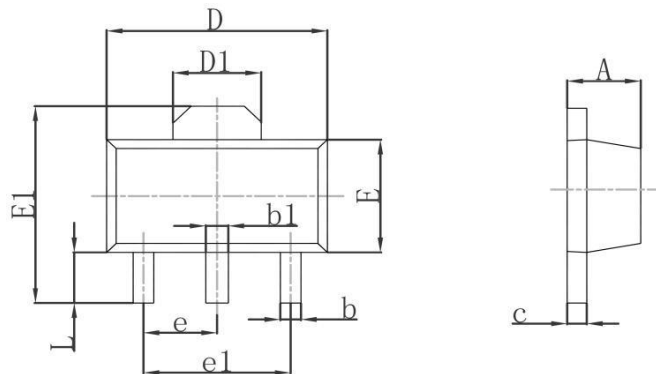
NPN Silicon Epitaxial Transistor

Typical Characteristics



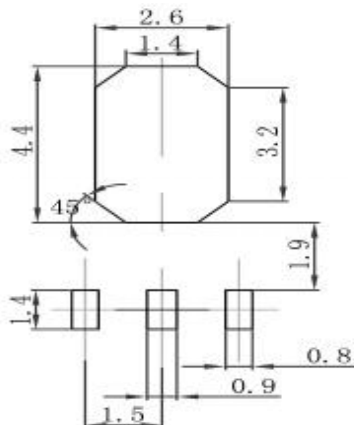
NPN Silicon Epitaxial Transistor

SOT-89 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	1.550REF		0.061REF	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500TYP		0.060TYP	
e1	3.000TYP		0.118TYP	
L	0.900	1.200	0.035	0.047

SOT-89 Suggested Pad Layout



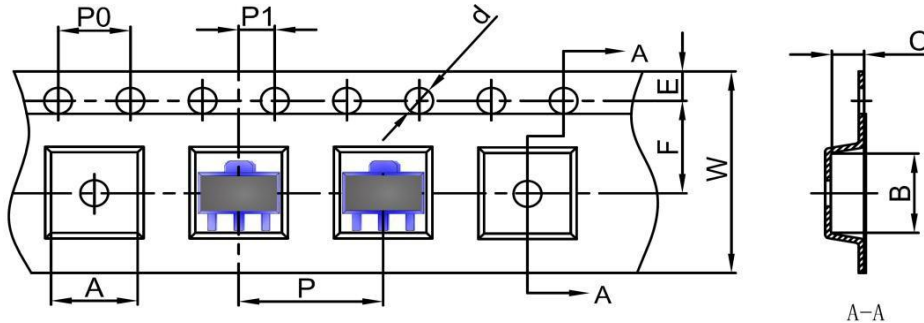
Note:

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

NPN Silicon Epitaxial Transistor

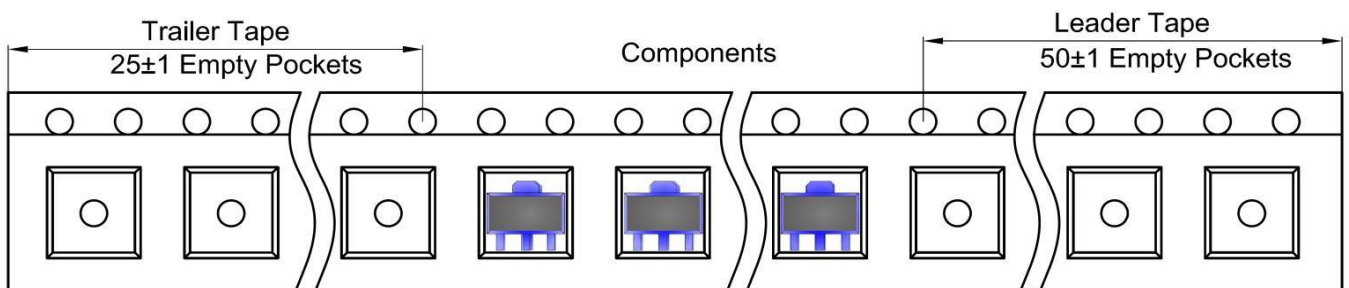
SOT-89 Tape and Reel

SOT-89 Embossed Carrier Tape

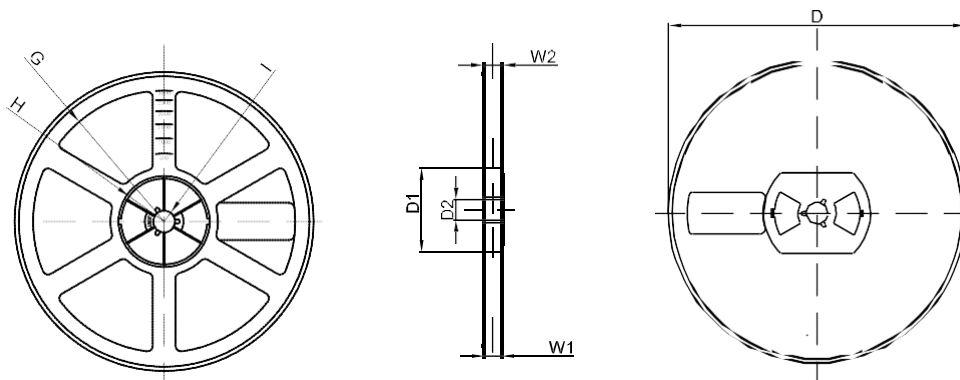


DIMENSIONS ARE IN MILLIMETER										
TYPE	A	B	C	d	E	F	P0	P	P1	W
SOT-89	4.85	4.45	1.85	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

SOT-89 Tape Leader and Trailer



SOT-89 Reel



DIMENSIONS ARE IN MILLIMETER								
REEL OPTION	D	D1	D2	G	H	I	W1	W2
7" DIA	Ø178	54.40	13.00	R78	R25.60	R6.50	13.20	16.50
TOLERANCE	±2	±1	±1	±1	±1	±1	±1	±1