

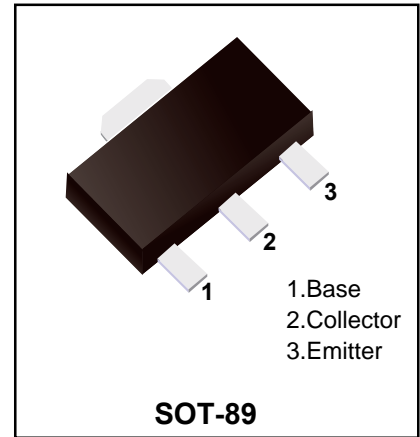
NPN Plastic-Encapsulate Transistors

Applications

◆High-Voltage Switching

Features

- ◆High breakdown voltage and large current capacity
- ◆Fast switching time
- ◆Complement the 2SA1417



Absolute Maximum Ratings (Ta=25°C)

Parameter		Symbol	Value	Unit
Collector-Base Voltage		BV_{CBO}	120	V
Collector-Emitter Voltage		BV_{CEO}	100	V
Emitter-Base Voltage		BV_{EBO}	6	V
Collector Current	DC	I_C	2	A
	Pulse	I_{CP}	3	
Collector Power Dissipation		P_C	500	mW
Junction Temperature		T_j	150	°C
Storage Temperature		T_{stg}	-55~+150	°C

Electrical Characteristics (Ta=25°C)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	BV_{CBO}	$I_C = 100\mu A, I_E = 0$	120			V
Collector-emitter breakdown voltage	BV_{CEO}	$I_C = 1mA, I_B = 0$	100			V
Emitter-base breakdown voltage	BV_{EBO}	$I_E = 100\mu A, I_C = 0$	6			V
Collector-base cut-off current	I_{CBO}	$V_{CB} = 100V, I_E = 0$			100	nA
Emitter-base cut-off current	I_{EBO}	$V_{EB} = 4V, I_C = 0$			100	nA
DC current gain	h_{FE}	$V_{CE} = 5V, I_C = 100mA$	100		400	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 1A, I_B = 100mA$			0.4	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 1A, I_B = 100mA$			1.2	V
Transition frequency	f_T	$V_{CE} = 10V, I_E = 100mA$		120		MHz
Collector output capacitance	C_{ob}	$V_{CB} = 10V, I_E = 0, f = 1MHz$		16		pF

h_{FE} Classification

Classification	2SC3647-R	2SC3647-S	2SC3647-T
Range	100~200	140~280	200~400
Marking	CCR	CCS	CCT

Typical Characteristics

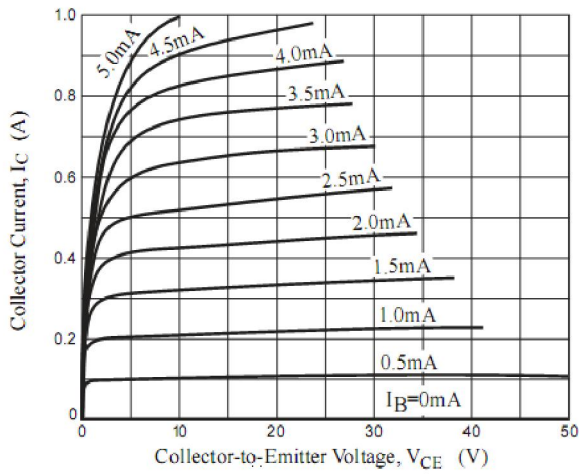


Figure 1. Static Characteristic

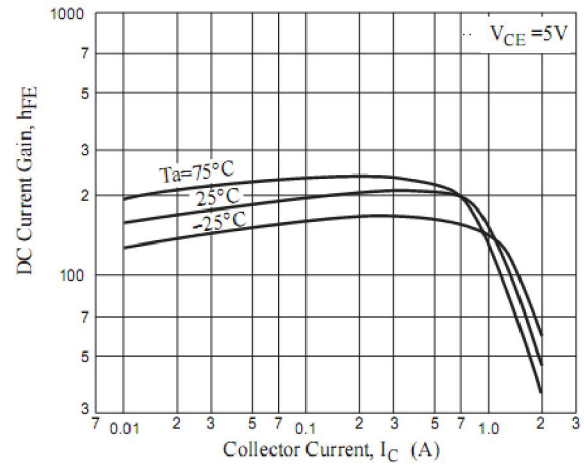


Figure 2. DC current Gain

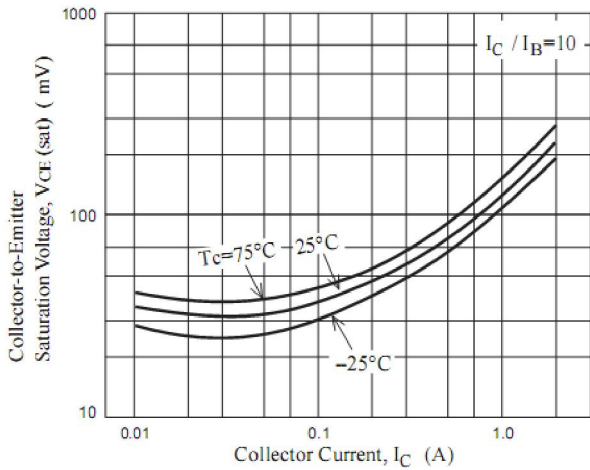


Figure 3. Collector-Emitter Saturation Voltage

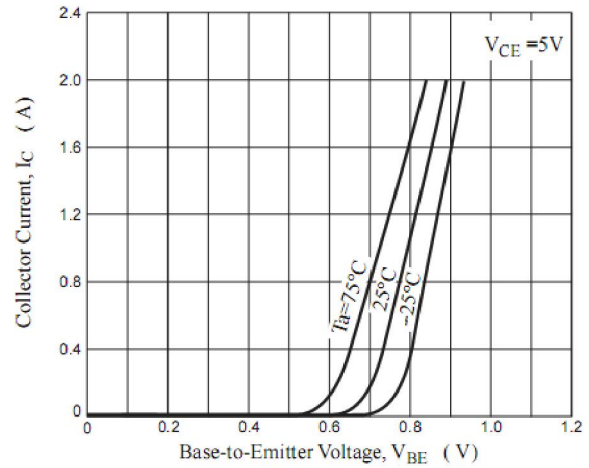


Figure 4. Base-Emitter Characteristics

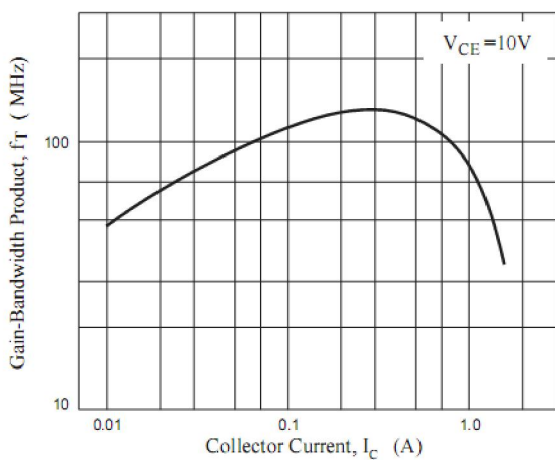


Figure 5. Current Gain Bandwidth Product

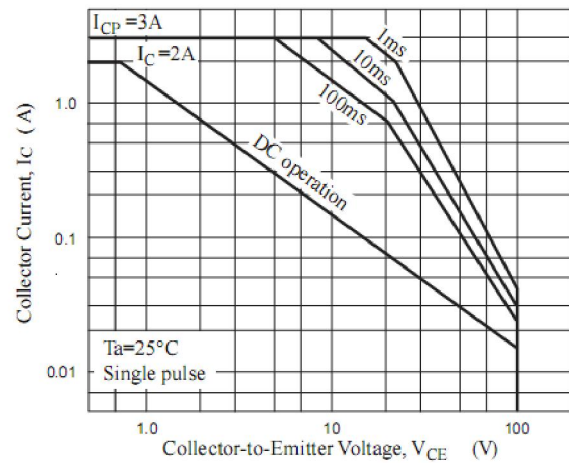


Figure 6. Safe Operating Area

Ordering information

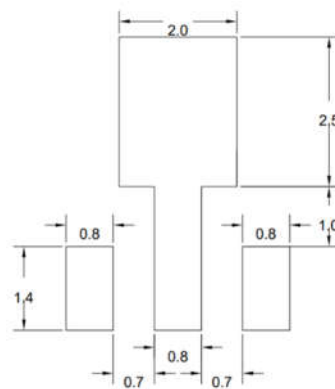
Package	Packing Description	Base Quantity	Packing Quantity
SOT-89	Tape/Reel, 7" reel	1000pcs/Reel	6000PCS/Box 30000PCS/Carton

Package Dimensions

SOT-89

Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	1.40	1.60	0.055	0.063
b	0.32	0.52	0.013	0.020
b1	0.38	0.58	0.015	0.023
c	0.35	0.45	0.014	0.018
D	4.40	4.60	0.173	0.181
D1	1.45	1.65	0.057	0.065
D2	1.70	1.80	0.067	0.071
E	2.30	2.60	0.091	0.102
E1	3.95	4.25	0.156	0.167
E2	1.80	2.00	0.071	0.079
e	1.40	1.60	0.055	0.063
e1	2.80	3.20	0.110	0.126
L	0.90	1.20	0.035	0.047

The recommended mounting pad size



UNIT:MM

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