



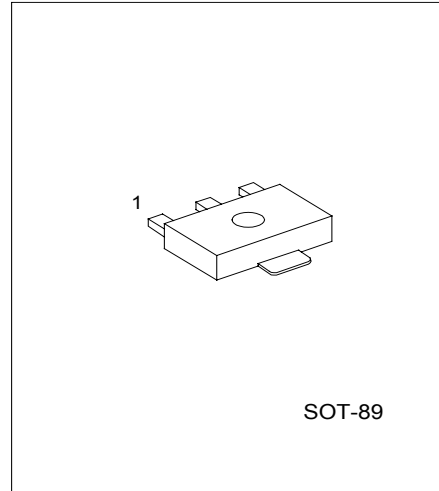
2SC3647

NPN EPITAXIAL SILICON TRANSISTOR

HIGH-VOLTAGE SWITCHING APPLICATIONS

■ FEATURES

- * Adoption of FBET, MBIT processes
- * High breakdown voltage and large current capacity
- * Fast switching time
- * Very small size marking it easy to provide high - density, small-sized hybrid ICs



*Pb-free plating product number: 2SC3647L

■ PIN CONFIGURATION

PIN NO.	PIN NAME
1	Emitter
2	Collector
3	Base

■ ORDERING INFORMATION

Order Number		Package	Packing
Normal	Lead free		
2SC3647-AB3-R	2SC3647L-AB3-R	SOT-89	Tape Reel

■ ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector to Base Voltage	V_{CBO}	120	V
Collector to Emitter Voltage	V_{CEO}	100	V
Emitter to Base Voltage	V_{EBO}	6	V
Collector Current	I_C	2	A
Collector Current (Pulse)	I_{CP}	3	A
Collector Dissipation	P_C	500	mW
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-40 ~ +150	°C

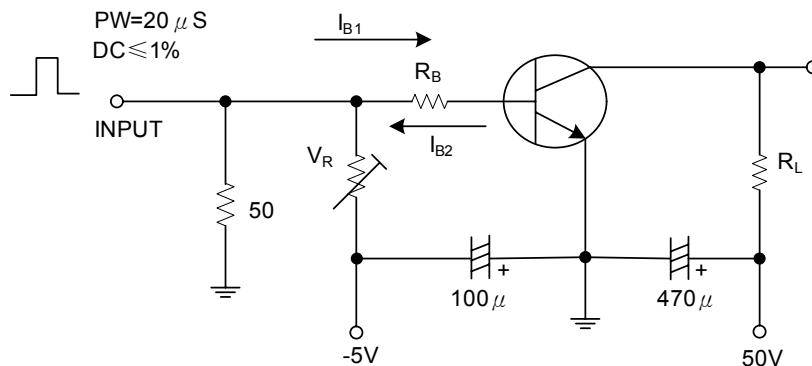
■ ELECTRICAL CHARACTERISTICS (Ta = 25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = 1A, I_B = 100mA$		0.13	0.4	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C = 1A, I_B = 100mA$		0.85	1.2	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 10\mu A, I_E = 0$	120			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1mA, R_{BE} = \infty$	100			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\mu A, I_C = 0$	6			V
Collector Cutoff Current	I_{CBO}	$V_{CB} = 100V, I_E = 0$			100	nA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 4V, I_C = 0$			100	nA
Output Capacitance	C_{ob}	$V_{CB} = 10V, f = 1MHz$		16		pF
DC Current Gain	h_{FE}	$V_{CE} = 5V, I_C = 100mA$	100		400	
Turn-ON Time	t_{ON}	See specified Test Circuit.		80		ns
Storage Time	t_{STG}	See specified Test Circuit.		1000		ns
Fall Time	t_F	See specified Test Circuit.		50		ns
Gain-Bandwidth Product	f_T	$V_{CE} = 10V, I_C = 100mA$		120		MHz

■ CLASSIFICATION OF hFE

RANK	R	S	T
RANGE	100 ~ 200	140 ~ 280	200 ~ 400

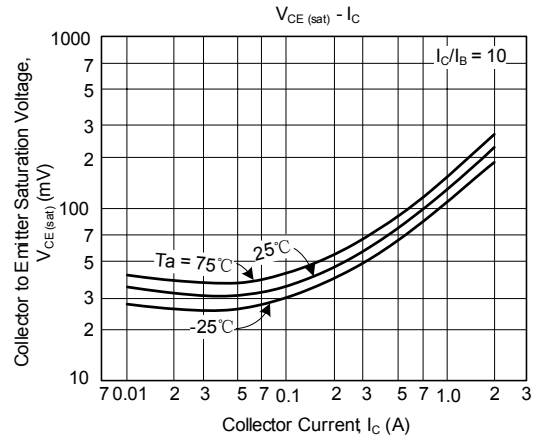
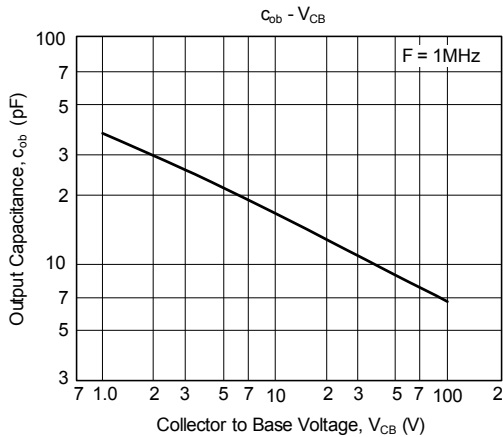
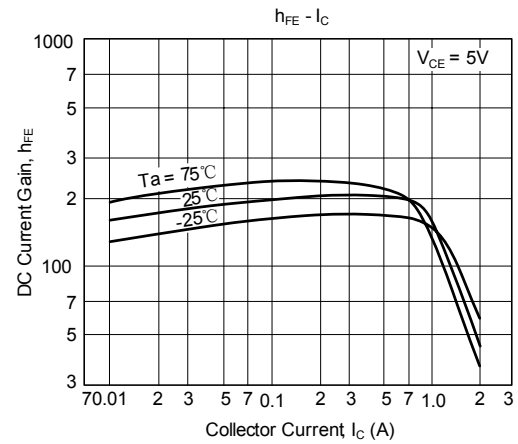
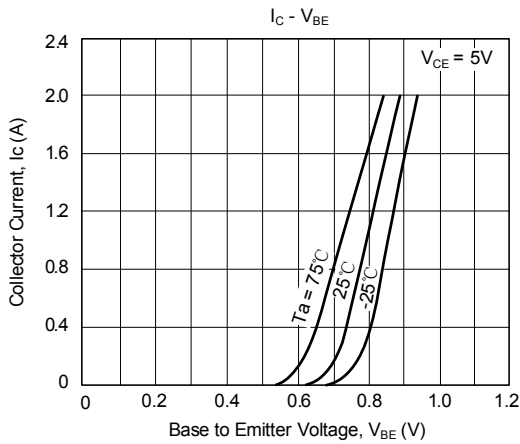
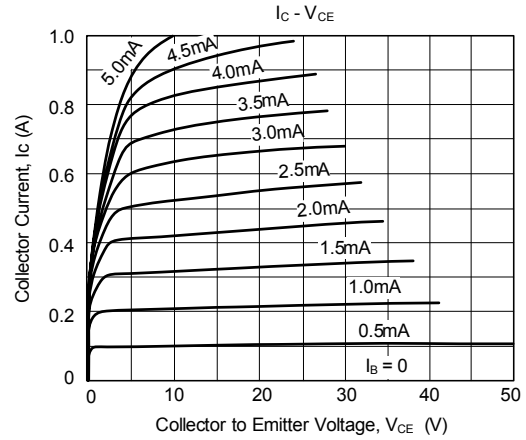
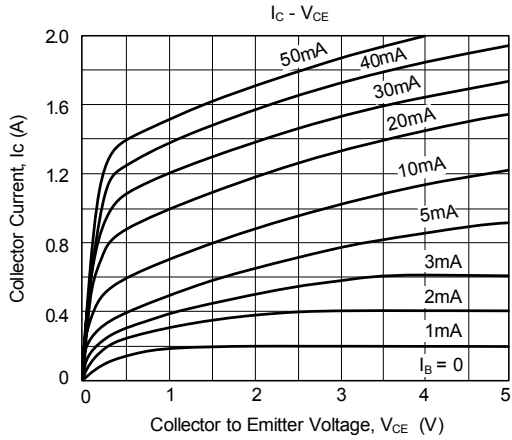
■ SWITCHING TIME TEST CIRCUIT



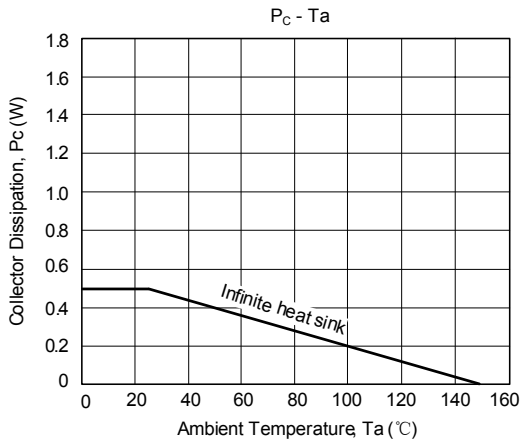
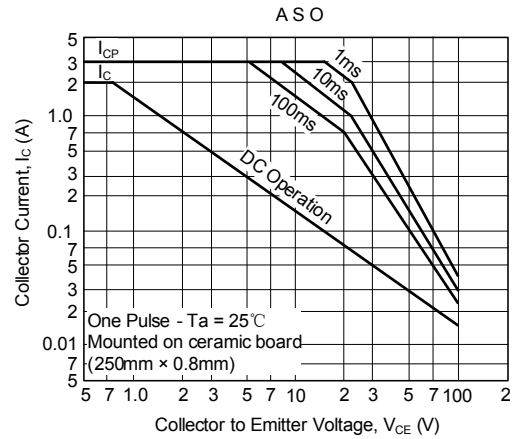
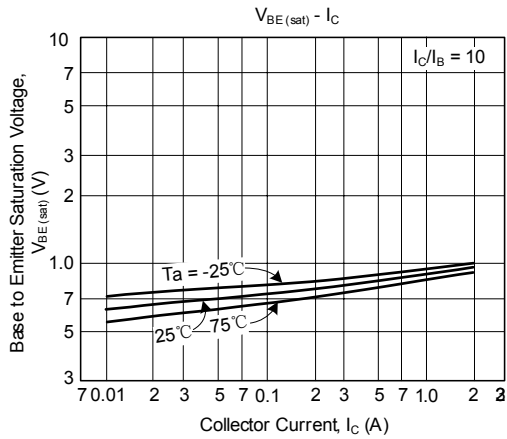
$$10I_{B1} = -10I_{B2} = I_C = 0.7A$$

Unit (Resistance: Ω , Capacitance:F)

■ TYPICAL CHARACTERISTICS



TYPICAL CHARACTERISTICS(Cont.)



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