



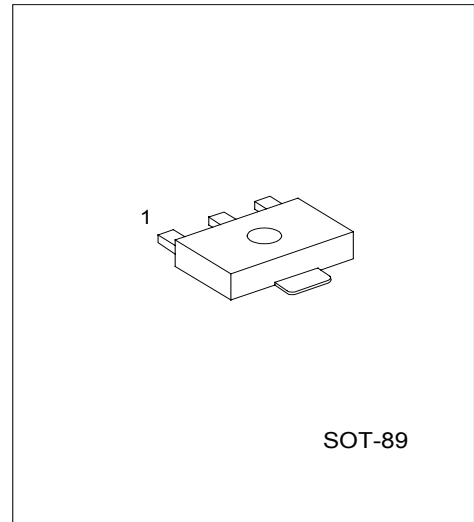
2SC3647

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

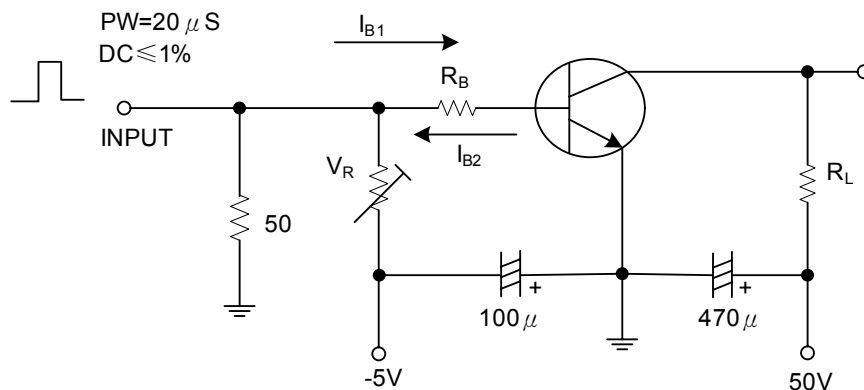
■ ELECTRICAL CHARACTERISTICS (Ta= 25°C, unless otherwise specified)

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 = 10μA, I _E = 0	120			V
C-E Breakdown Voltage	V _{(BR)CEO}	I _C = 1mA, R _{BE} = ∞	100			V
E-B Breakdown Voltage	V _{(BR)EBO}	I _E = 10μA, 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

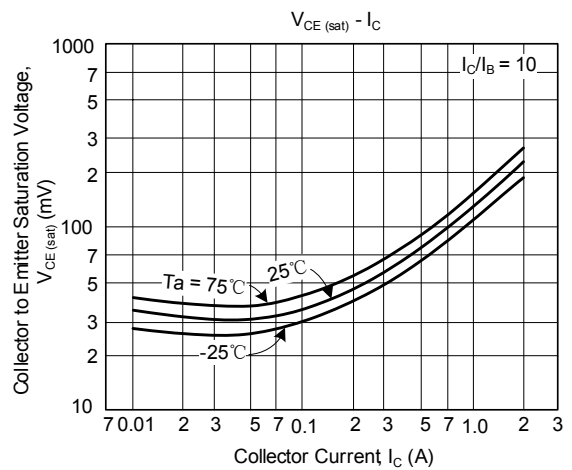
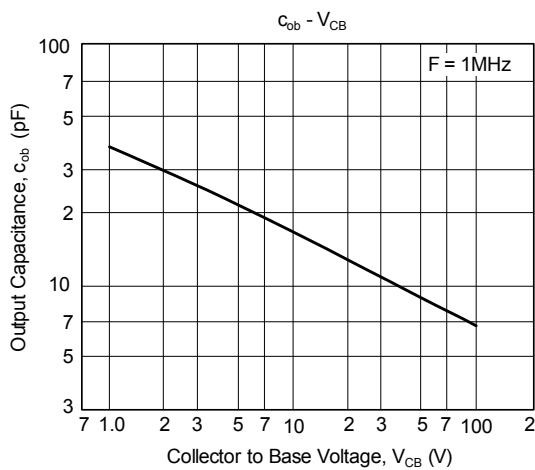
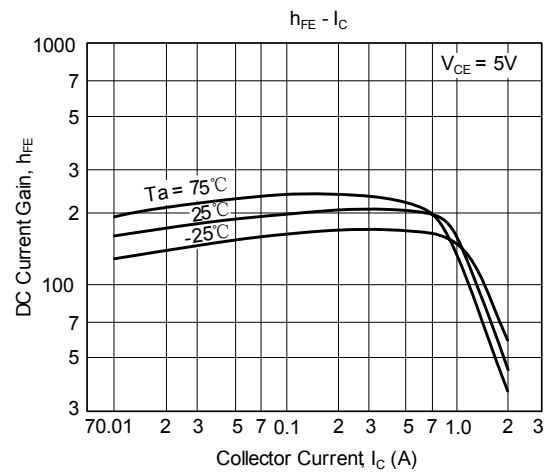
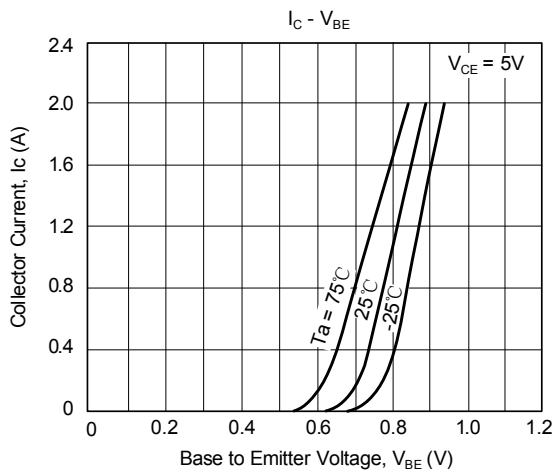
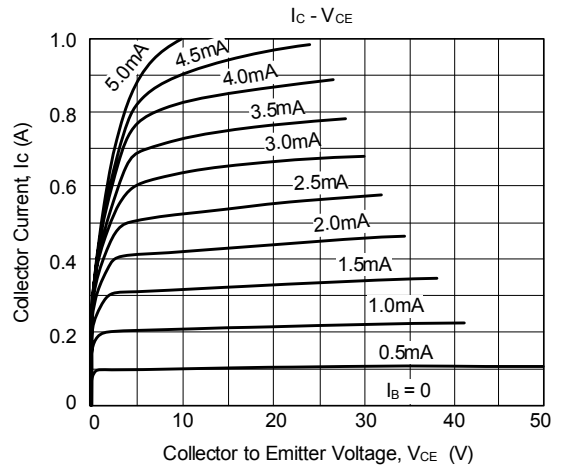
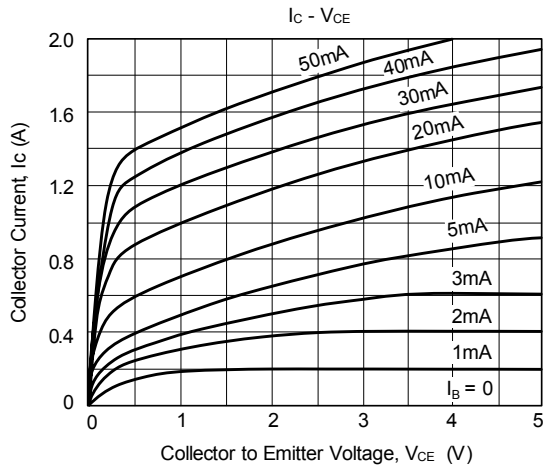
■ SWITCHING TIME TEST CIRCUIT



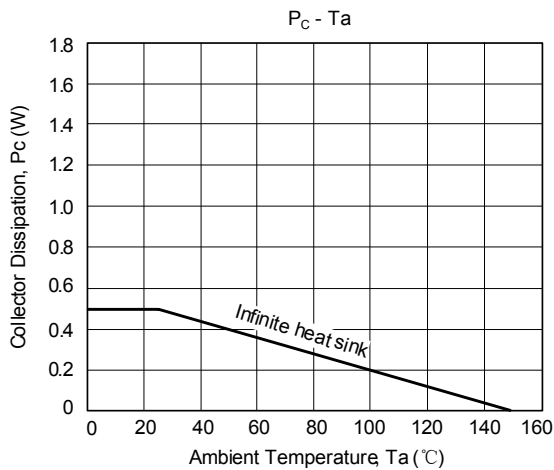
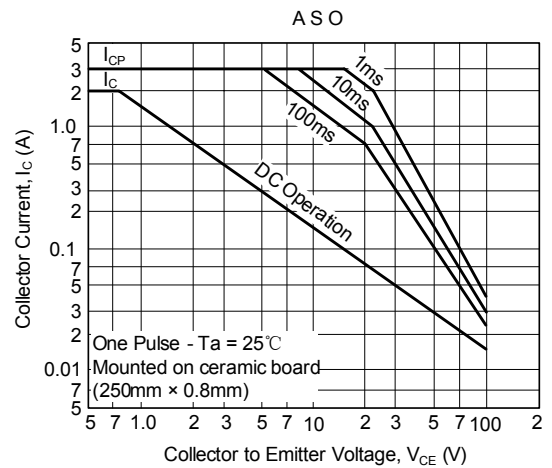
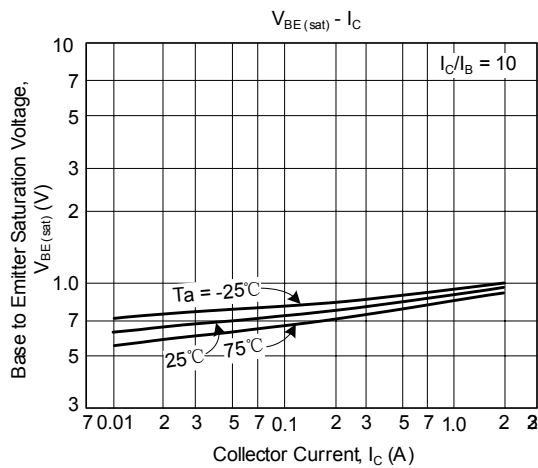
$$10I_{B1} = -10I_{B2} = I_C = 0.7A$$

Unit (Resistance: Ω, Capacitance: F)

■ TYPICAL CHARACTERISTICS



TYPICAL CHARACTERISTICS(Cont.)



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