



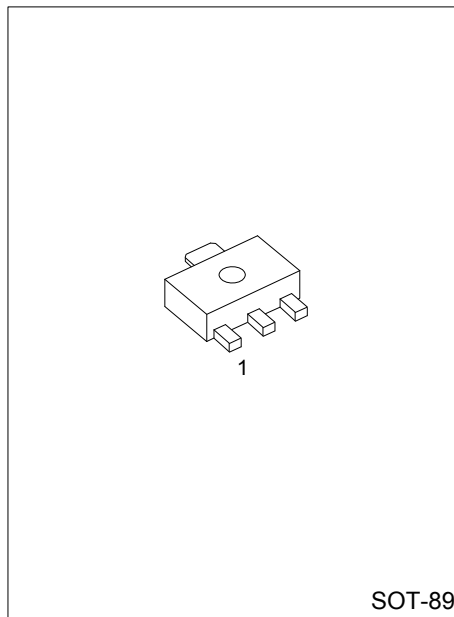
## 2SC3647

## NPN SILICON TRANSISTOR

### HIGH-VOLTAGE SWITCHING APPLICATIONS

#### ■ FEATURES

- \* High breakdown voltage and large current capacity
- \* Fast switching time
- \* Very small size marking it easy to provide high – density, small-sized hybrid ICs



Lead-free: 2SC3647L  
Halogen-free: 2SC3647G

#### ■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free Plating	Halogen Free		1	2	3	
2SC3647L-x-AB3-R	2SC3647G-x-AB3-R	SOT-89	B	C	E	Tape Reel

<p>2SC3647L-x-AB3-R</p>	<p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Rank</p> <p>(4) Lead Plating</p>	<p>(1) R: Tape Reel</p> <p>(2) AB3: SOT-89</p> <p>(3) x: refer to Classification of <math>h_{FE}</math></p> <p>(4) G: Halogen Free, L: Lead Free</p>
-------------------------	---	--

■ ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector to Base Voltage	V <sub>CBO</sub>	120	V
Collector to Emitter Voltage	V <sub>CEO</sub>	100	V
Emitter to Base Voltage	V <sub>EBO</sub>	6	V
Collector Current	I <sub>C</sub>	2	A
Collector Current (Pulse)	I <sub>CP</sub>	3	A
Collector Dissipation	P <sub>C</sub>	500	mW
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>STG</sub>	-40 ~ +150	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.  
Absolute maximum ratings are stress ratings only and functional device operation is not implied.

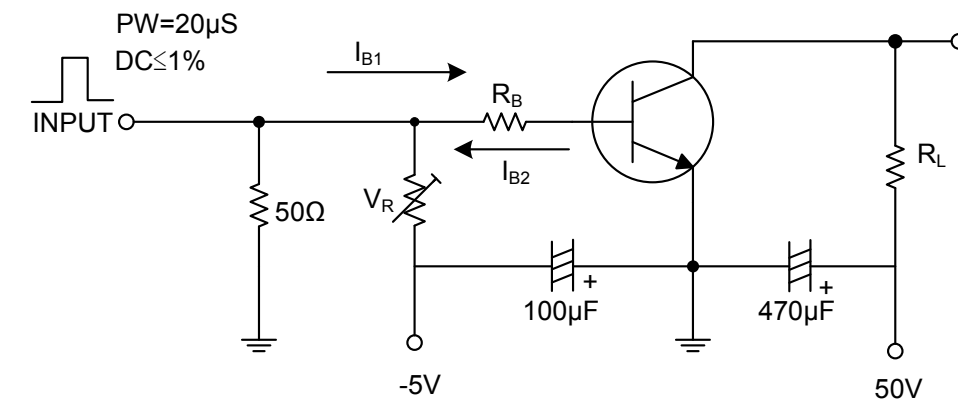
■ ELECTRICAL CHARACTERISTICS (Ta = 25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV <sub>CBO</sub>	I <sub>C</sub> = 10μA, I <sub>E</sub> = 0	120			V
Collector-Emitter Breakdown Voltage	BV <sub>CEO</sub>	I <sub>C</sub> = 1mA, R <sub>BE</sub> = ∞	100			V
Emitter-Base Breakdown Voltage	BV <sub>EBO</sub>	I <sub>E</sub> = 10μA, I <sub>C</sub> = 0	6			V
Collector Cutoff Current	I <sub>CBO</sub>	V <sub>CB</sub> = 100V, I <sub>E</sub> = 0			100	nA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> = 4V, I <sub>C</sub> = 0			100	nA
Collector-Emitter Saturation Voltage	V <sub>CE(SAT)</sub>	I <sub>C</sub> = 1A, I <sub>B</sub> = 100mA		0.13	0.4	V
Base-Emitter Saturation Voltage	V <sub>BE(SAT)</sub>	I <sub>C</sub> = 1A, I <sub>B</sub> = 100mA		0.85	1.2	V
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> = 10V, f = 1MHz		16		pF
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> = 5V, I <sub>C</sub> = 100mA	100		400	
Turn-ON Time	t <sub>ON</sub>	See specified Test Circuit.		80		ns
Storage Time	t <sub>STG</sub>	See specified Test Circuit.		1000		ns
Fall Time	t <sub>F</sub>	See specified Test Circuit.		50		ns
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> = 10V, I <sub>C</sub> = 100mA		120		MHz

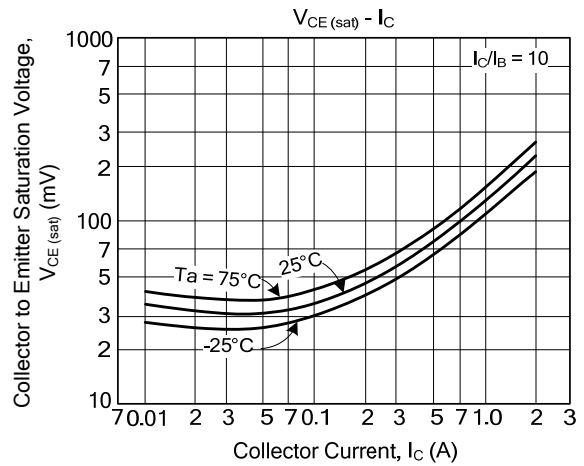
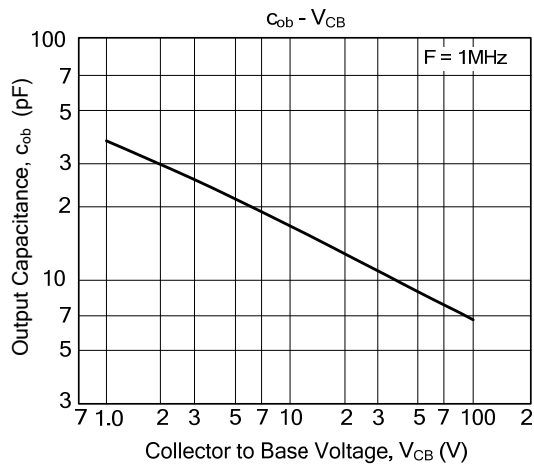
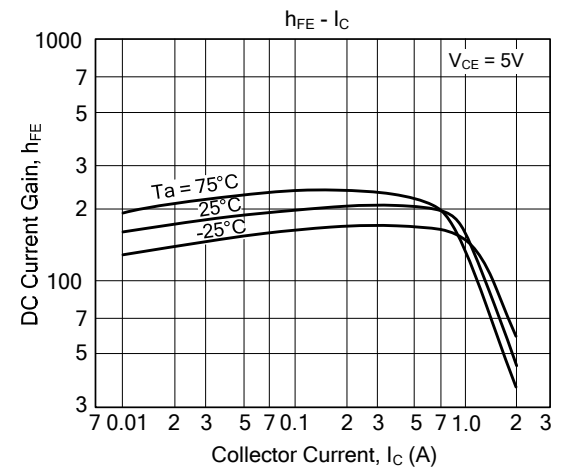
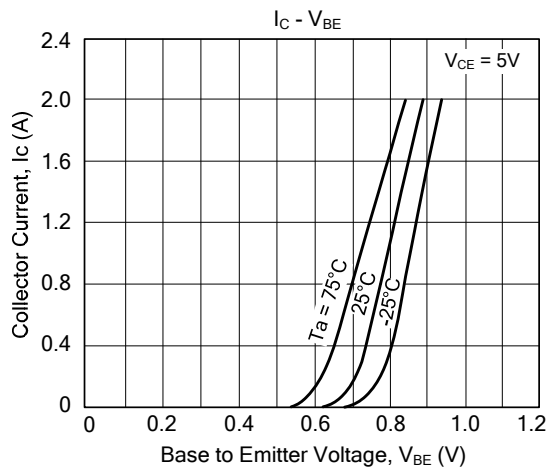
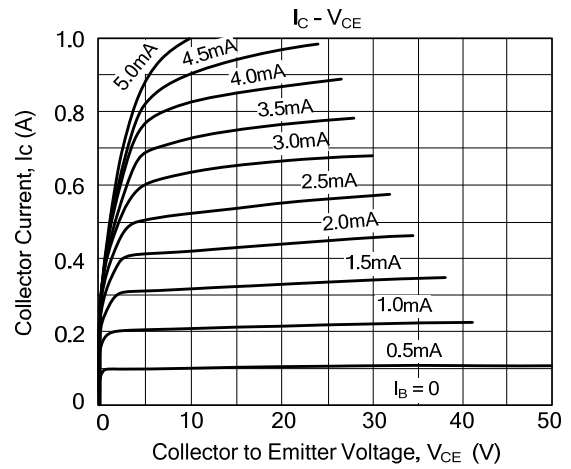
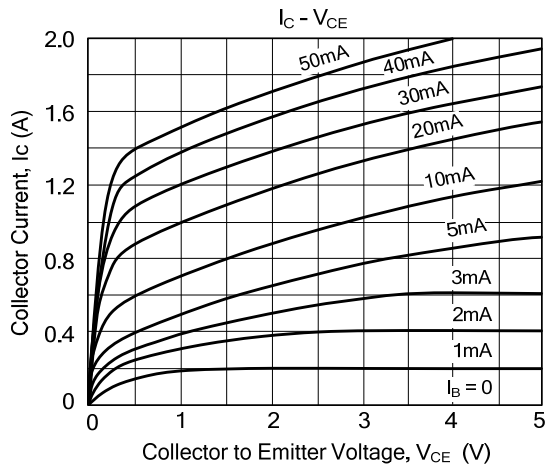
■ CLASSIFICATION OF h<sub>FE</sub>

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

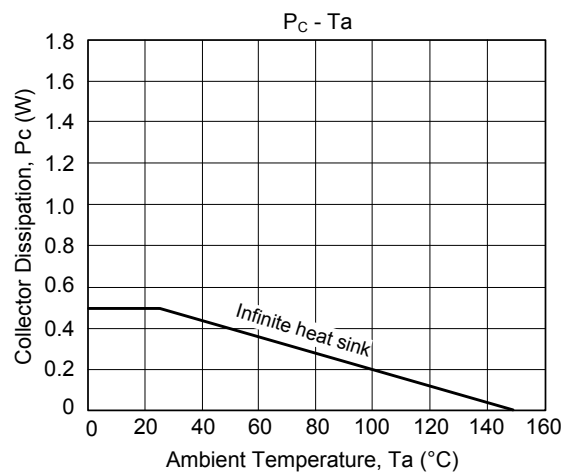
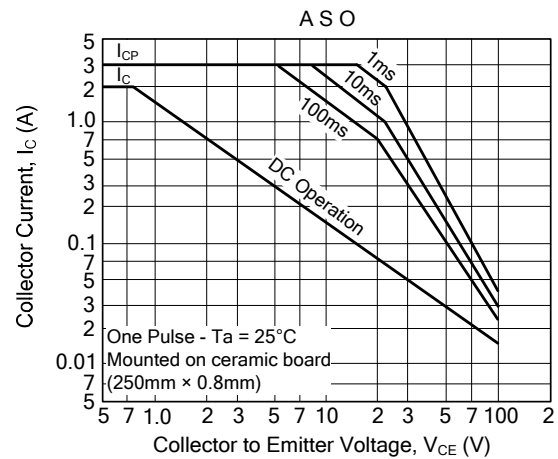
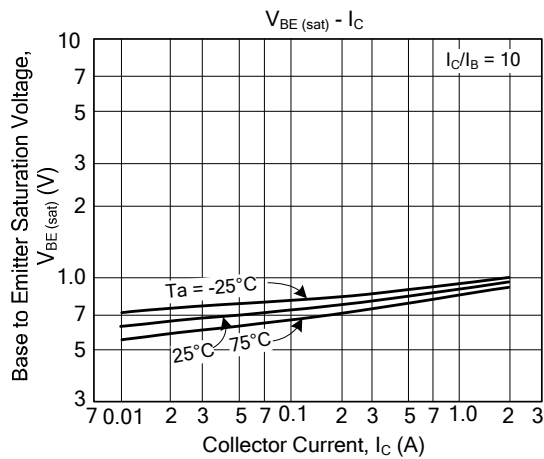
■ SWITCHING TIME TEST CIRCUIT



## TYPICAL CHARACTERISTICS



## TYPICAL CHARACTERISTICS(Cont.)



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.