



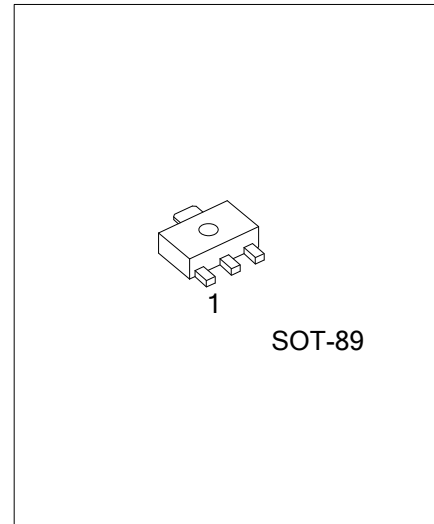
2SC3647

NPN SILICON TRANSISTOR

HIGH-VOLTAGE SWITCHING APPLICATIONS

FEATURES

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



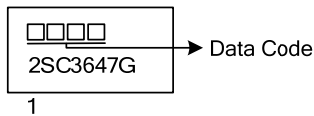
ORDERING INFORMATION

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

Note: Pin Assignment: B: Base C: Collector E: Emitter

<p>2SC3647G-x-AB3-R</p>	<p>(1) R: Tape Reel</p> <p>(2) AB3: SOT-89</p> <p>(3) x: refer to Classification of h_{FE}</p> <p>(4) G: Halogen Free and Lead Free</p>
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MARKING



■ ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector to Base Voltage	V_{CB0}	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	$^\circ\text{C}$
Storage Temperature	T_{STG}	-40 ~ +150	$^\circ\text{C}$

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.

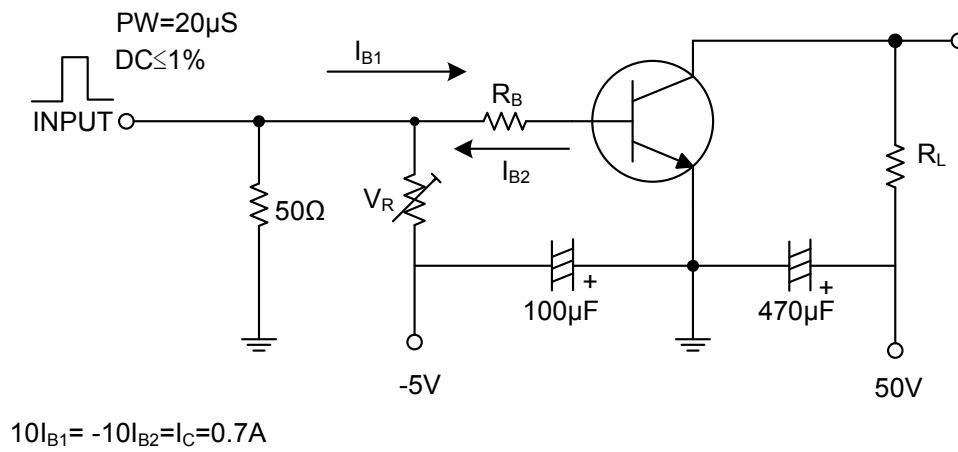
■ ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV_{CB0}	$I_C = 10\mu\text{A}$, $I_E = 0$	120			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C = 1\text{mA}$, $R_{BE} = \infty$	100			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E = 10\mu\text{A}$, $I_C = 0$	6			V
Collector Cutoff Current	I_{CBO}	$V_{CB} = 100\text{V}$, $I_E = 0$			100	nA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 4\text{V}$, $I_C = 0$			100	nA
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C = 1\text{A}$, $I_B = 100\text{mA}$		0.13	0.4	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C = 1\text{A}$, $I_B = 100\text{mA}$		0.85	1.2	V
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}$, $f = 1\text{MHz}$		16		pF
DC Current Gain	h_{FE}	$V_{CE} = 5\text{V}$, $I_C = 100\text{mA}$	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	$V_{CE} = 10\text{V}$, $I_C = 100\text{mA}$		120		MHz

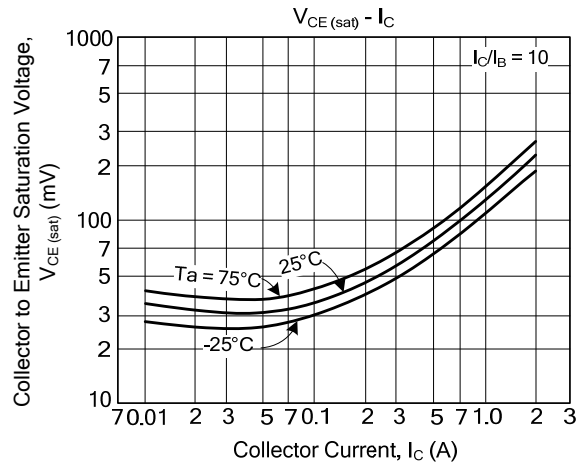
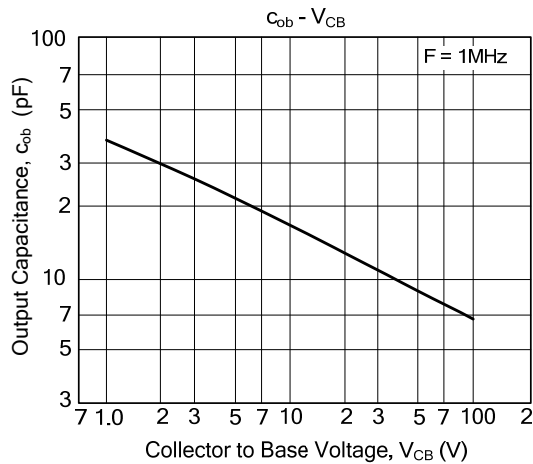
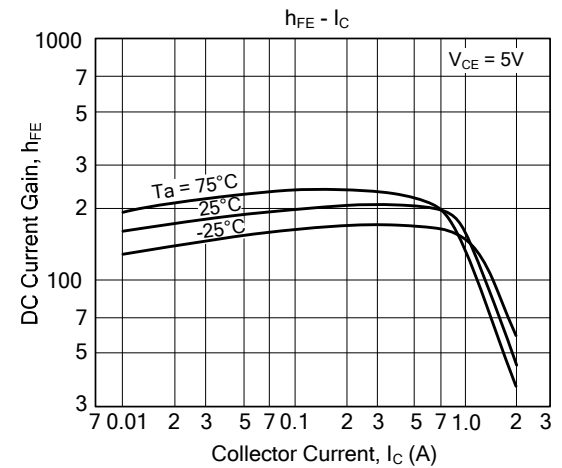
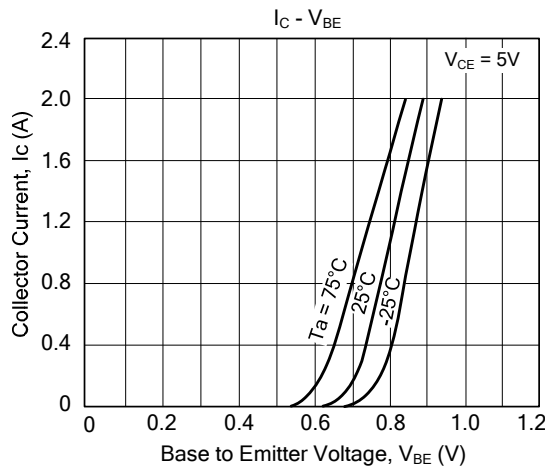
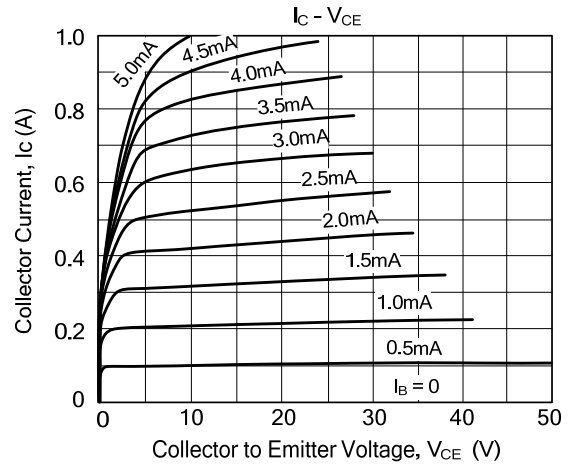
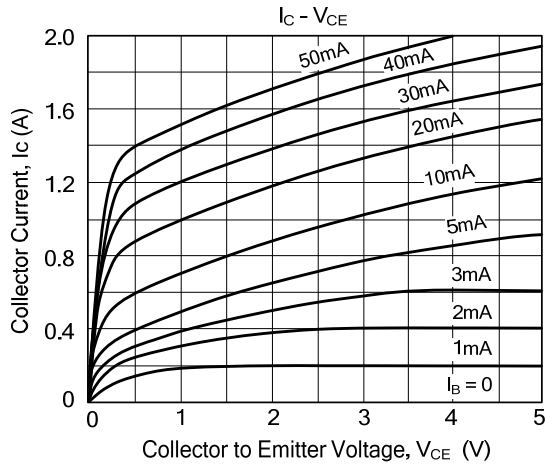
■ CLASSIFICATION OF h_{FE}

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

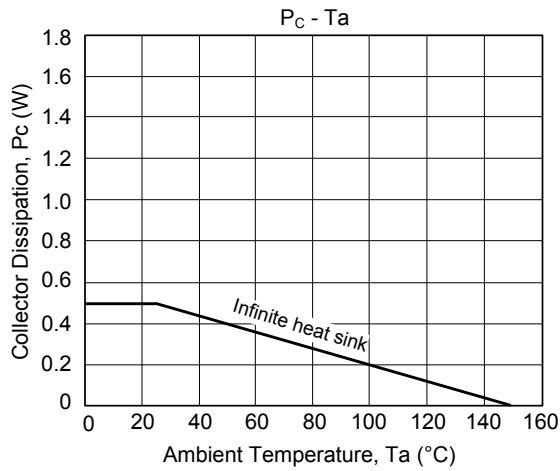
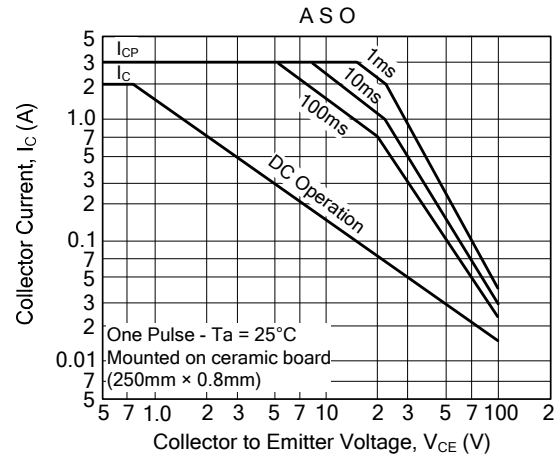
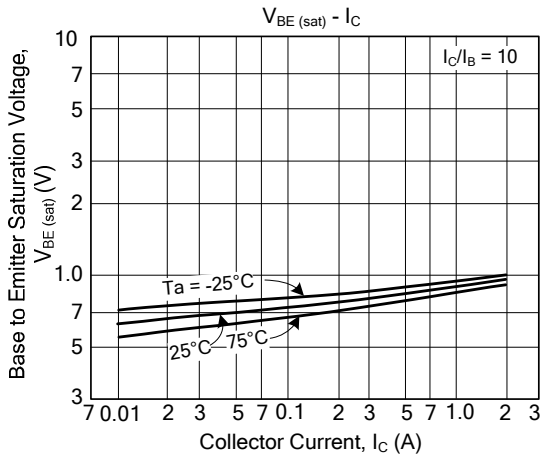
■ SWITCHING TIME TEST CIRCUIT



TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(Cont.)



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