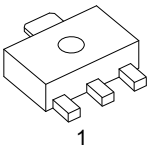
2SC3647

NPN SILICON TRANSISTOR

HIGH-VOLTAGE SWITCHING APPLICATIONS



SOT-89

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

■ 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

■ 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

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

■ ABSOLUATE MAXIUM 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

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.

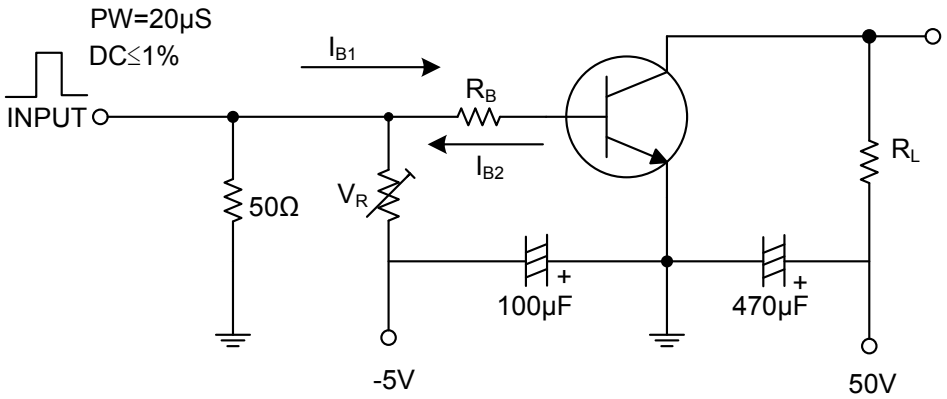
■ ELECTRICAL CHARACTERISTICS (Ta= 25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV_{CBO}	I_C = 10μA, I_E =0	120			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	I_C = 1mA, R_{BE} =∞	100			V
Emitter-Base Breakdown Voltage	BV_{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
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	I_C = 1A, I_B = 100mA		0.13	0.4	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	I_C = 1A, I_B = 100mA		0.85	1.2	V
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 h_{FE}

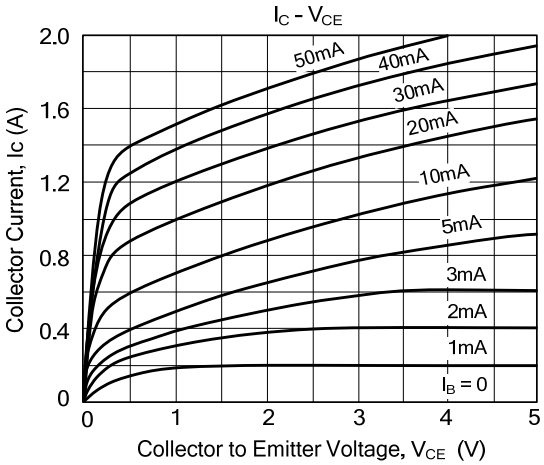
RANK	R	S	T
RANGE	100 ~ 200	140 ~ 280	200 ~ 400

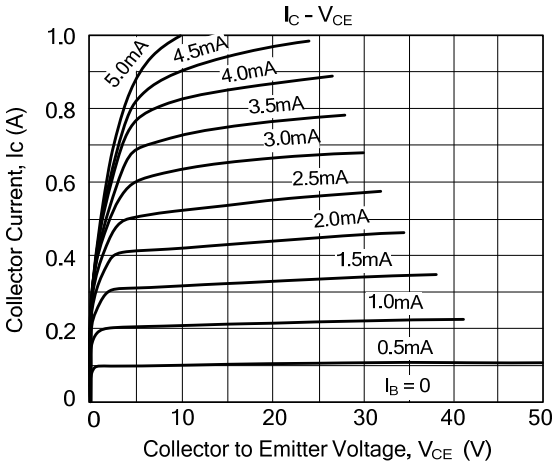
■ SWITCHING TIME TEST CIRCUIT

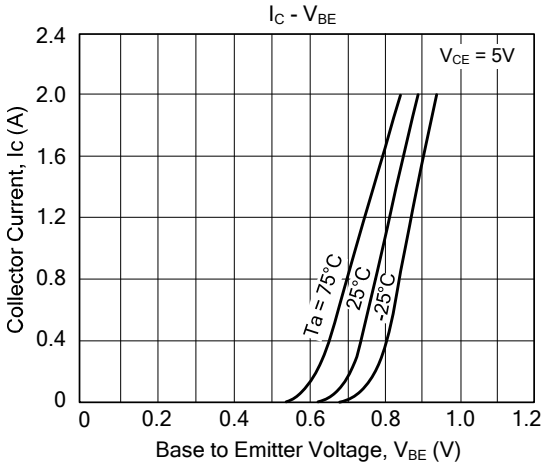


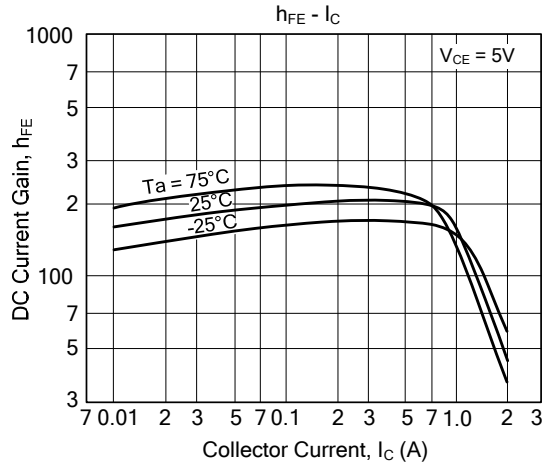
$10I_{B1}= -10I_{B2}=I_C=0.7A$

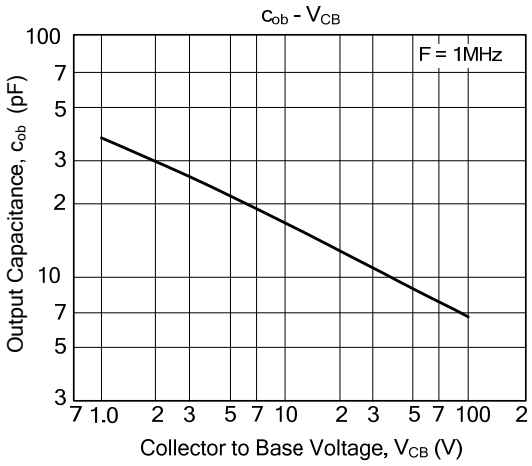
■ TYPICAL CHARACTERICS

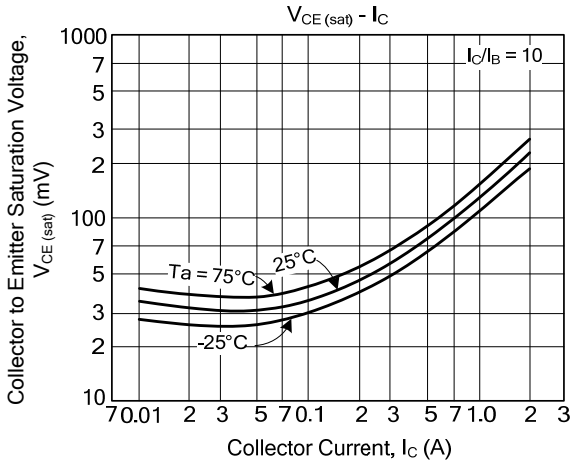












■ TYPICAL CHARACTERICS(Cont.)