

# UTC 2SC5569 NPN EPITAXIAL SILICON TRANSISTOR

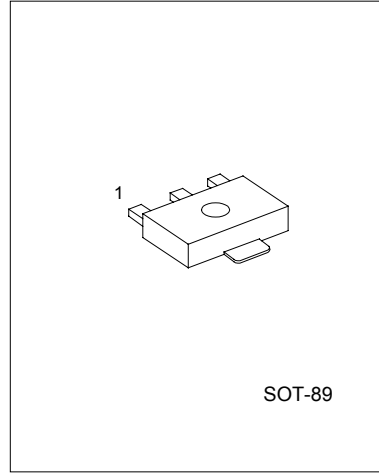
## DC/DC CONVERTER APPLICATIONS

### FEATURES

- \*High current capacitance.
- \*Low collector-to-emitter saturation voltage.
- \*High-speed switching.
- \*High allowable power dissipation.
- \*Complementary to 2SA2016.

### APPLICATIONS

- \*Relay drivers, lamp drivers, motor drivers, strobes



1:EMITTER 2:COLLECTOR 3:BASE

### ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V <sub>CB0</sub>	80	V
Collector-Emitter Voltage	V <sub>CEO</sub>	50	V
Emitter-Base Voltage	V <sub>EBO</sub>	6	V
Collector Current	I <sub>c</sub>	7	A
Collector Current (Pulse)	I <sub>cp</sub>	10	A
Base Current	I <sub>B</sub>	1.2	A
Collector Dissipation T <sub>c</sub> =25°C	P <sub>c</sub>	1.3*	W
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55 ~ +150	°C

\* Mounted on ceramic board (250mm<sup>2</sup>×0.8mm)

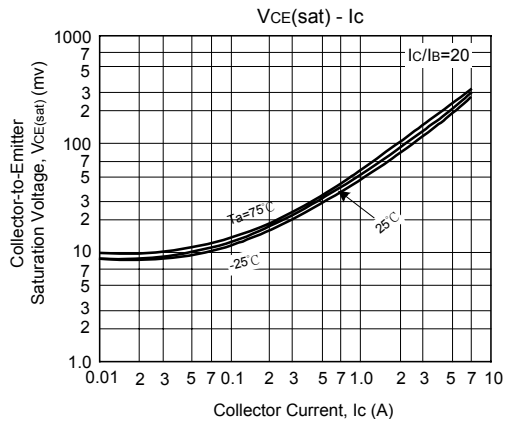
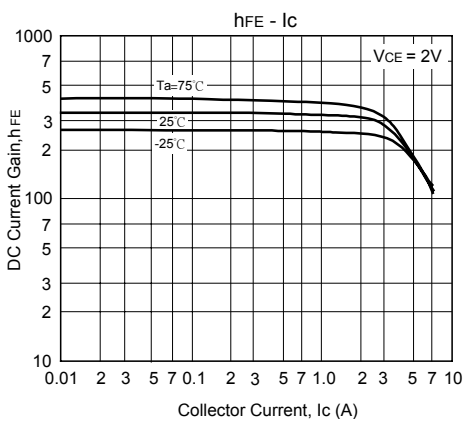
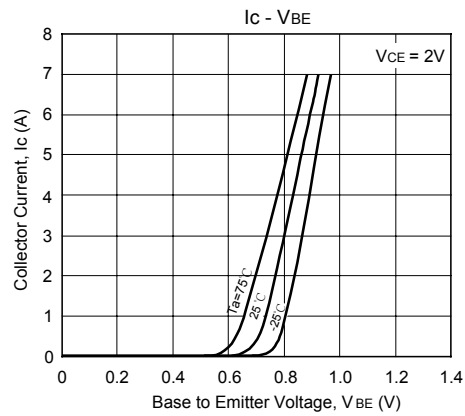
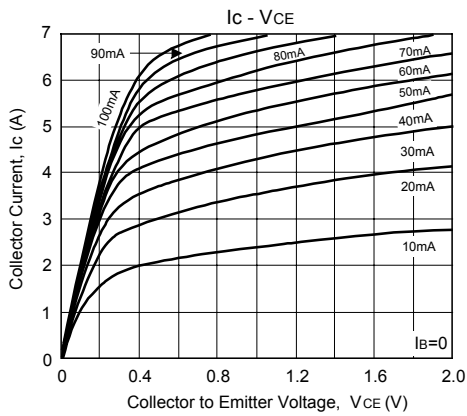
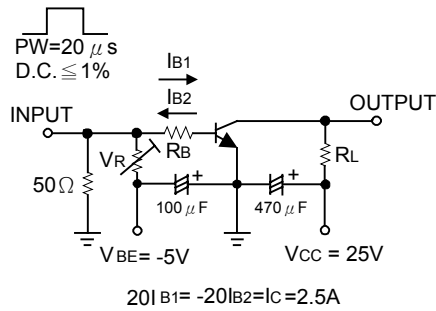
### ELECTRICAL CHARACTERISTICS (Ta=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector to Base Breakdown Voltage	V <sub>(BR)CBO</sub>	I <sub>c</sub> =10 μA, I <sub>E</sub> =0	80			V
Collector to Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>c</sub> =1mA, R <sub>BE</sub> =∞	50			V
Emitter to Base Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =10 μA, I <sub>C</sub> =0	6			V
Collector Cut-Off Current	I <sub>CBO</sub>	V <sub>CB</sub> =40V, I <sub>E</sub> =0			0.1	μA
Emitter Cut-Off Current	I <sub>EBO</sub>	V <sub>EB</sub> =4V, I <sub>c</sub> =0			0.1	μA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> =2V, I <sub>c</sub> =500mA	200		560	
Collector to Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>c</sub> =3.5A, I <sub>B</sub> =175mA		160	240	mV
		I <sub>c</sub> =2A, I <sub>B</sub> =40mA		110	170	mV
Base to Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>c</sub> =2A, I <sub>B</sub> =40mA		0.83	1.2	V
Gain Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>c</sub> =500mA		330		MHz
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V, f=1MHz		28		pF
Turn-On Time	t <sub>on</sub>	See specified Test Circuit		30		ns
Storage Time	t <sub>stg</sub>	See specified Test Circuit		420		ns

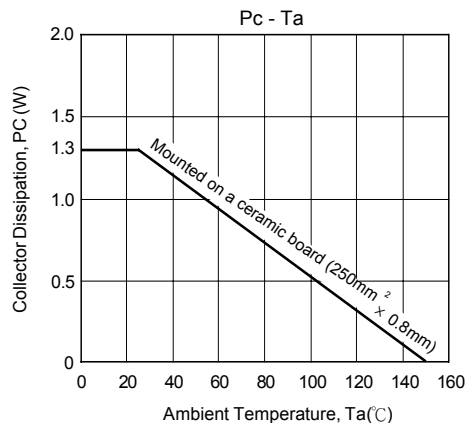
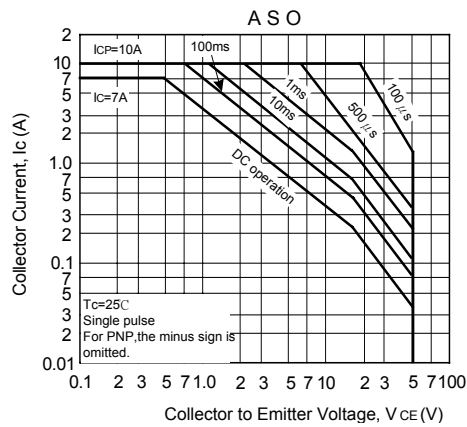
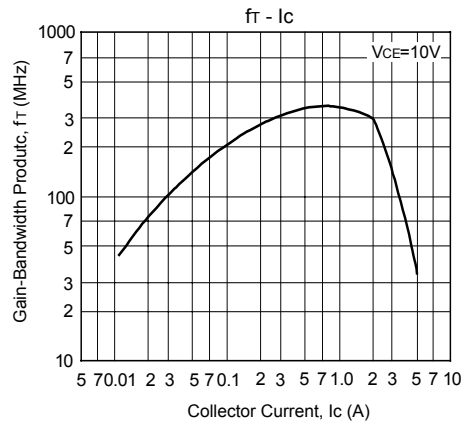
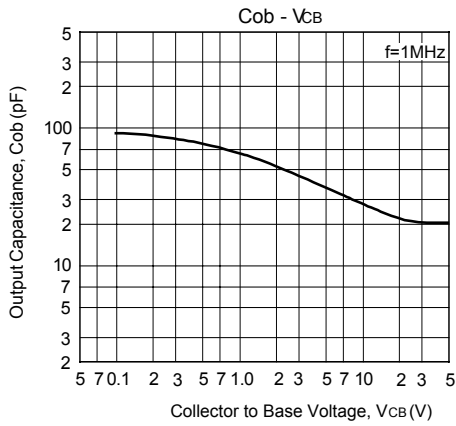
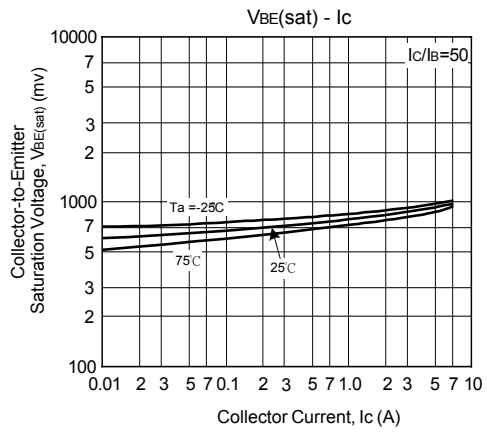
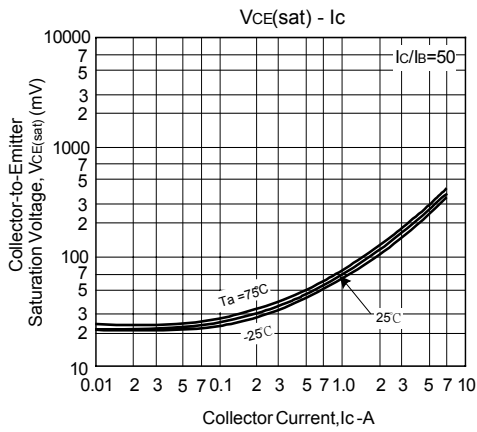
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PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Fall Time	$t_f$	See specified Test Circuit		25		ns

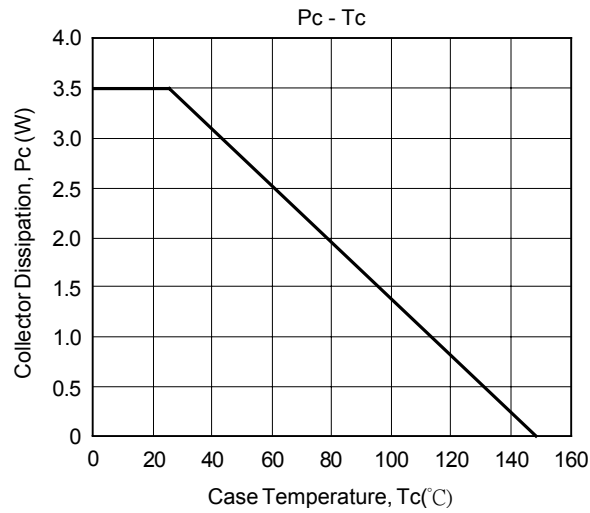
## SWITCHING TIME TEST CIRCUIT



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