NPN Triple Diffused Planar Silicon Transistor



2SC3460

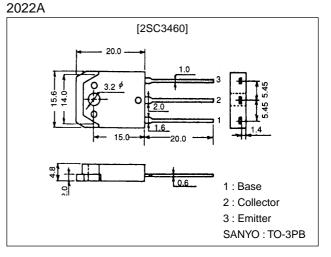
# 800V/6A Switching Regulator Applications

### Features

- · High breakdown voltage and high reliability.
- $\cdot$  Fast switching speed (tf : 0.1  $\mu s$  typ).
- $\cdot$  Wide ASO.
- · Adoption of MBIT process.

## **Package Dimensions**

unit:mm



# **Specifications**

### Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V <sub>CBO</sub>		1100	V
Collector-to-Emitter Voltage	VCEO		800	V
Emitter-to-Base Voltage	VEBO		7	V
Collector Current	IC		6	A
Collector Current (Pulse)	ICP	PW≤300µs, Duty Cycle≤10%	20	A
Base Current	Ι <sub>Β</sub>		3	Α
Collector Dissipation	PC	Tc=25°C	100	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

#### **Electrical Characteristics at Ta = 25°C**

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	V <sub>CB</sub> =800V, I <sub>E</sub> =0			10	μA
Emitter Cutoff Current	IEBO	$V_{EB}=5V, I_{C}=0$			10	μA
DC Current Gain	hFE1	$V_{CE}=5V, I_{C}=0.4A$	10*		40*	
	h <sub>FE</sub> 2	$V_{CE}=5V, I_{C}=2A$	8			
Gain-Bandwidth Product	fT	V <sub>CE</sub> =10V, I <sub>C</sub> =0.4A		15		MHz
Output Capacitance	Cob	V <sub>CB</sub> =10V, f=1MHz		120		pF

\* : The  $h_{FE1}$  of the 2SC3460 is classified as follows. When specifying the  $h_{FE1}$  rank, specify two ranks or more in principle.

10 K 20 15 L 30 20 M 40

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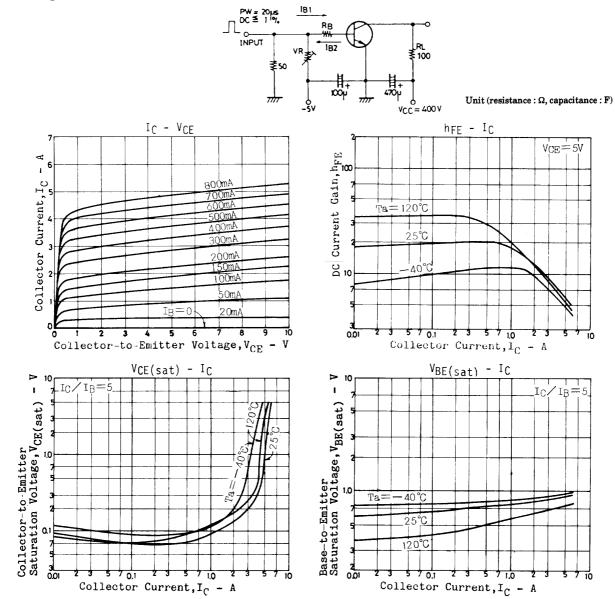
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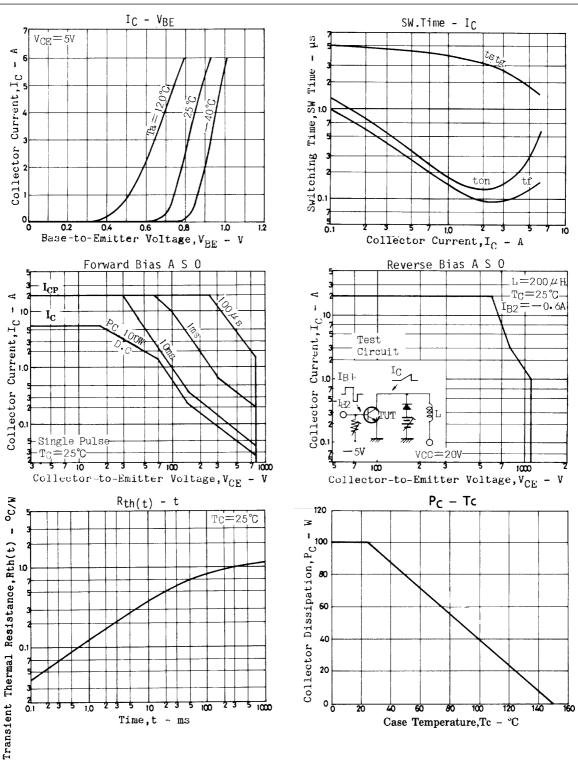
SANYO Electric Co., Ltd. Semiconductor Bussiness Headquaters TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =3A, I <sub>B</sub> =0.6A			2.0	V
Base-to-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =3A, I <sub>B</sub> =0.6A			1.5	V
Collector-to-Base Breakdown Voltage	V(BR)CBO	I <sub>C</sub> =1mA, I <sub>E</sub> =0	1100			V
Collector-to-Emitter Breakdown Voltage	V(BR)CEO	I <sub>C</sub> =5mA, R <sub>BE</sub> =∞	800			V
Emitter-to-Base Breakdown Voltage	V(BR)EBO	IE=1mA, IC=0	7			V
Collector-to-Emitter Sustain Voltage	VCEX(sus)	I <sub>C</sub> =3A, I <sub>B1</sub> =-I <sub>B2</sub> =0.6A, L=1mH, clamped	800			V
Turn-ON Time	ton	$V_{CC}$ =400V, 5I <sub>B1</sub> =-2.5I <sub>B2</sub> =I <sub>C</sub> =4A, R <sub>L</sub> =100 $\Omega$			0.5	μs
Storage Time	<sup>t</sup> stg	$V_{CC}$ =400V, 5I <sub>B1</sub> =-2.5I <sub>B2</sub> =I <sub>C</sub> =4A, R <sub>L</sub> =100 $\Omega$			3.0	μs
Fall Time	t <sub>f</sub>	$V_{CC}$ =400V, 5I <sub>B1</sub> =-2.5I <sub>B2</sub> =I <sub>C</sub> =4A, R <sub>L</sub> =100 $\Omega$			0.3	μs

### **Switching Time Test Circuit**





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