



Switching Regulator Applications

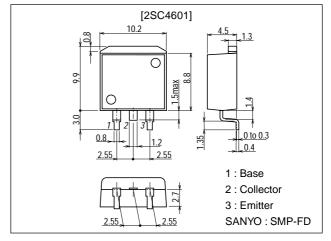
Features

- · Surface mount type device making the following possible.
- -Reduction in the number of manufacturing processes for 2SC4601-applied equipment.
- -High density surface mount applications.
- -Small size of 2SC4601-applied equipment.
- · High breakdown voltage, high reliability.
- · Fast switching speed.
- · Wide ASO.
- · Adoption of MBIT process.

Package Dimensions

unit:mm

2069C



Specifications

Absolute Maximum Ratings at Ta = 25°C

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Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CBO}		1100	V
Collector-to-Emitter Voltage	V _{CEO}		800	V
Emitter-to-Base Voltage	V _{EBO}		7	V
Collector Current	l _C		1.5	Α
Collector Current (Pulse)	I _{CP}	PW≤300μs, duty cycle≤10%	5	Α
Base Current	Ι _Β		0.8	Α
Collector Dissipation	PC		1.65	W
		Tc=25°C	40	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
	Symbol		min	typ	max	Offic
Collector Cutoff Current	I _{CBO}	V _{CB} =800V, I _E =0			10	μΑ
Emitter Cutoff Current	I _{EBO}	V _{EB} =5V, I _C =0			10	μΑ
DC Current Gain	h _{FE} 1	V _{CE} =5V, I _C =0.1A	10*		40*	
	h _{FE} 2	V _{CE} =5V, I _C =0.5A	8			

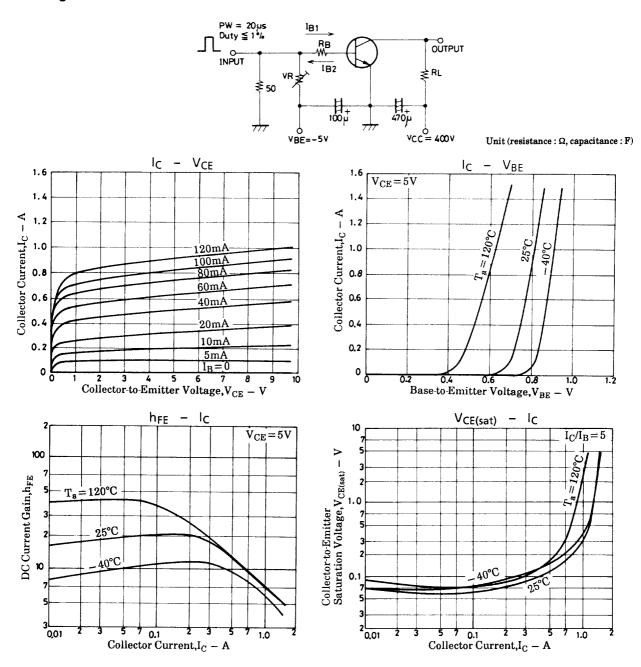
^{*:} For the h_{FE}1 of the 2SC4601, specify two ranks or more in principle.

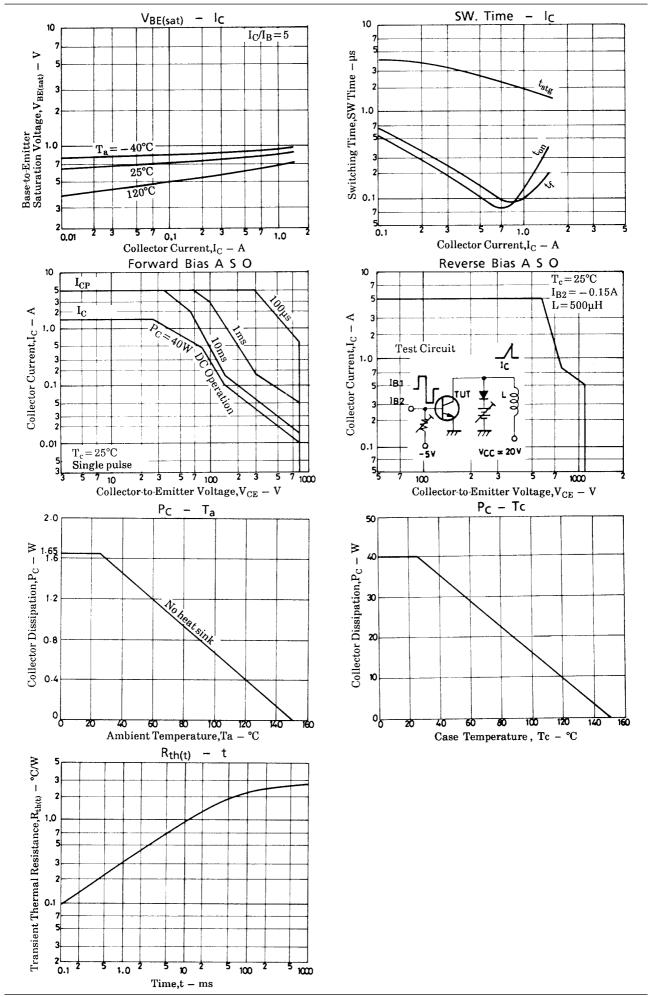
10 K 20 15 L 30 20 M 40

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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	Oill
Gain-Bandwidth Product	f _T	V _{CE} =10V, I _C =0.1A		15		MHz
Output Capacitance	C _{ob}	V _{CB} =10V, f=1MHz		35		pF
Collector-to-Emitter Saturation Voltage	V _{CE(sat)}	I _C =0.75A, I _B =0.15A			2.0	V
Base-to-Emitter Saturation Voltage	V _{BE(sat)}	I _C =0.75A, I _B =0.15A			1.5	V
Collector-to-Base Breakdown Voltage	V(BR)CBO	I _C =1mA, I _E =0	1100			V
Collector-to-Emitter Breakdown Voltage	V(BR)CEO	I _C =5mA, R _{BE} =∞	800			V
Emitter-to-Base Breakdown Voltage	V(BR)EBO	I _E =1mA, I _C =0	7			V
Collector-to-Emitter Sustain Voltage	V _{CEO(sus)}	I _C =0.75A, I _{B1} =-I _{B2} =0.15A, L=5mH, clamped	800			V
Turn-ON Time	ton	I_{C} =1A, I_{B1} =0.2A, I_{B2} =-0.4A, R_{L} =400 Ω , V_{CC} =400 V			0.5	μs
Storage Time	t _{stg}	I _C =1A, I _{B1} =0.2A, I _{B2} =-0.4A, R _L =400Ω, V _{CC} =400V			3.0	μs
Fall Time	t _f	I _C =1A, I _{B1} =0.2A, I _{B2} =-0.4A, R _L =400Ω, V _{CC} =400V			0.3	μs

Switching Time Test Circuit





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