



400V/10A Switching Regulator Applications

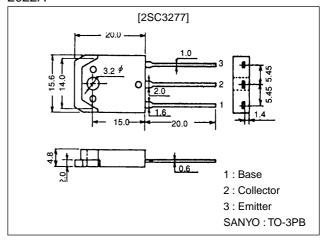
Features

- · High breakdown voltage, high current.
- · Wide ASO.
- $\cdot \ Fast \ switching \ speed.$

Package Dimensions

unit:mm

2022A



Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CBO}		500	V
Collector-to-Emitter Voltage	VCEO		400	V
Emitter-to-Base Voltage	VEBO		7	V
Collector Current	lc		10	Α
Collector Current (Pulse)	I _{CP}	PW≤300μs, Duty Cycle≤10%	20	Α
Collector Dissipation	PC	Tc=25°C	90	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions		Ratings		
	Symbol		min	typ	max	Unit
Collector Cutoff Current	I _{CBO}	V _{CB} =400V, 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 =1.2A	15*		50*	
	h _{FE} 2	V _{CE} =5V, I _C =6A	8			
Gain-Bandwidth Product	fT	V _{CE} =10V, I _C =1.2A		20		MHz
Output Capacitance	C _{ob}	V _{CB} =10V, f=1MHz		120		pF

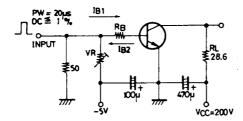
^{*:} The h_{FE}1 of the 2SC3277 is classified as follows. When specifying the h_{FE}1 rank, specify two ranks or more in principle.

	15	L	30	20	M	40	30	Ν	50	
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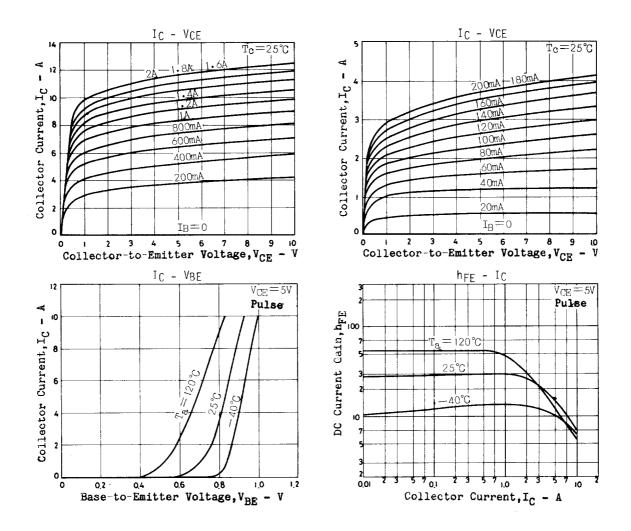
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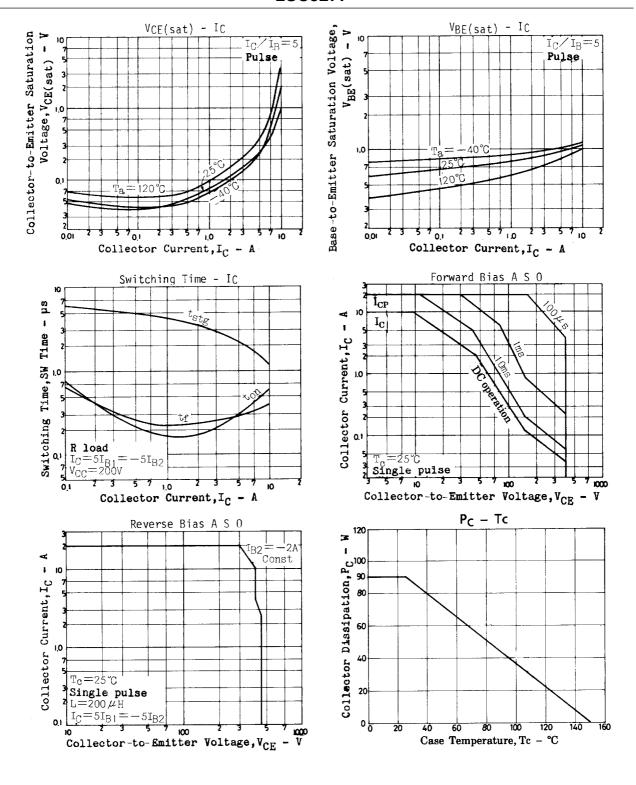
Parameter	Symbol	Conditions		Ratings		
Farameter	Symbol			typ	max	Unit
Collector-to-Emitter Saturation Voltage	V _{CE(sat)}	I _C =6A, I _B =1.2A			1.0	V
Base-to-Emitter Saturation Voltage	V _{BE(sat)}	I _C =6A, I _B =1.2A			1.5	V
Collector-to-Base Breakdown Voltage	V(BR)CBO	I _C =1mA, I _E =0	500			V
Collector-to-Emitter Breakdown Voltage	V(BR)CEO	I _C =5mA, R _{BE} =∞	400			V
Emitter-to-Base Breakdown Voltage	V(BR)EBO	I _E =1mA, I _C =0	7			V
Collector-to-Emitter Sustain Voltage	VCEO(sus)	I _C =10A, I _B =2A, L=50μH	400			V
Collector-to-Emitter Sustain Voltage	VCEX(sus)1	I _C =10A, I _{B1} =2A, L=200μH, I _{B2} =–2A, clamped	400			V
	VCEX(sus)2	I _C =2.5A, I _{B1} =0.5A, L=200μH, I _{B2} =-0.5A, clamped	450			V
Turn-ON Time	t _{on}	I_{C} =7A, I_{B1} =1.4A, I_{B2} =-1.4A, R_{L} =28.6 Ω , V_{CC} =200 V			1.0	μs
Storage Time	^t stg	I_{C} =7A, I_{B1} =1.4A, I_{B2} =-1.4A, R_{L} =28.6 Ω , V_{CC} =200 V			2.5	μs
Fall Time	t _f	I_{C} =7A, I_{B1} =1.4A, I_{B2} =-1.4A, R_{L} =28.6 Ω , V_{CC} =200 V			1.0	μs

Switching Time Test Circuit



Unit (resistance : Ω , capacitance : F)





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