



800V/6A Switching Regulator Applications

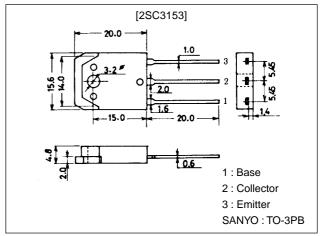
Features

- · High breakdown voltage (V_{CBO}≥900V).
- · Fast switching speed.
- · Wide ASO.

Package Dimensions

unit:mm

2022A



Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CBO}		900	V
Collector-to-Emitter Voltage	VCEO		800	V
Emitter-to-Base Voltage	V _{EBO}		7	V
Collector Current	IC		6	Α
Collector Current (Pulse)	I _{CP}	Pulse, PW≤300μs, Duty Cycle≤10%	20	Α
Base Current	I _B		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	01111
Collector Cutoff Current	ICBO	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 =0.4A	10*		40*	
	h _{FE} 2	V _{CE} =5V, I _C =2A	8			
Gain-Bandwidth Product	fT	V _{CE} =10V, I _C =0.4A		15		MHz
Output Capacitance	C _{ob}	V _{CB} =10V, f=1MHz		120		pF

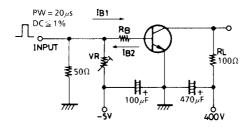
^{*}: For the $h_{\text{FE}}1$ of the 2SC3153, specify two ranks or more in principle.

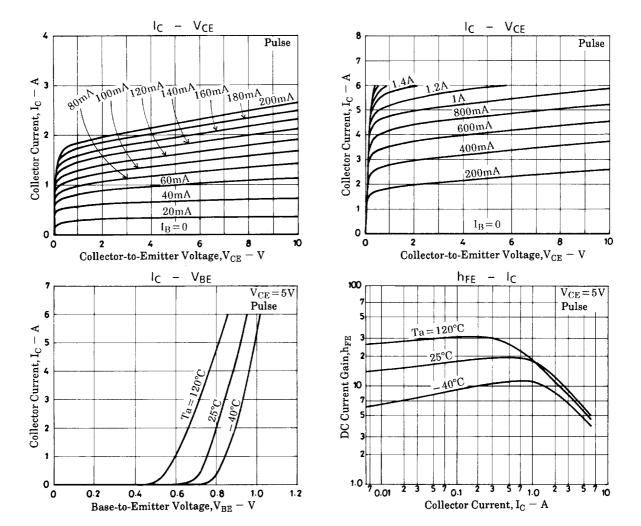
10 K 20 | 15 L 30 | 20 M 40

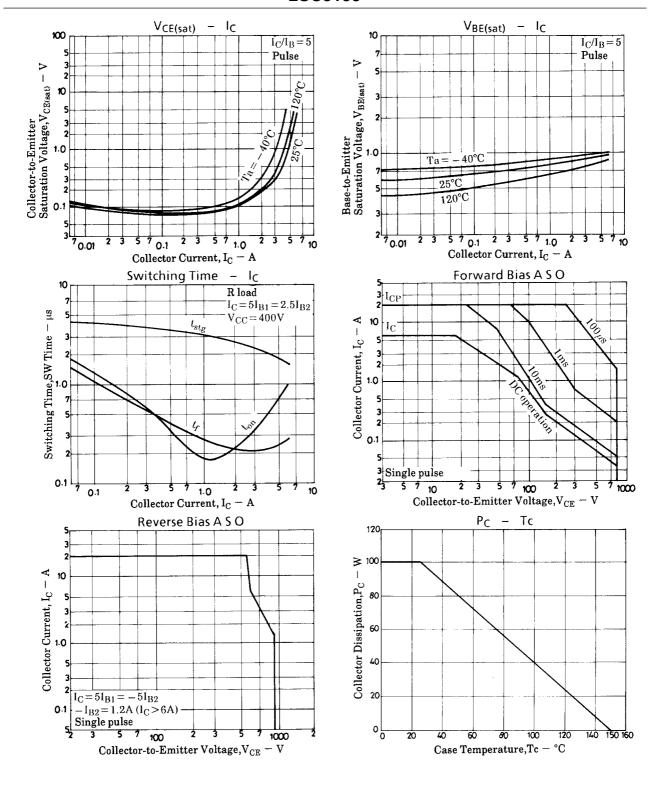
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	Oill
Collector-to-Emitter Saturation Voltage	V _{CE(sat)}	I _C =3A, I _B =0.6A			2.0	V
Base-to-Emitter Saturation Voltage	V _{BE(sat)}	I _C =3A, I _B =0.6A			1.5	V
Collector-to-Base Breakdown Voltage	V(BR)CBO	$I_C=1$ mA, $I_E=0$	900			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	VCEO(sus)	I _C =6A, L=200μH, I _B =2A	800			V
Collector-to-Emitter Sustain Voltage	V _{CEX(sus)1}	I _C =2A, I _{B1} =0.4A, I _{B2} =-0.4A, L=1mH, clamped	800			V
	VCEX(sus)2	I _C =1A, I _{B1} =0.2A, I _{B2} =-0.2A, L=2mH, clamped	900			V
Turn-ON Time	ton	I_{C} =4A, I_{B1} =0.8A, I_{B2} =-1.6A, R_{L} =100 Ω , V_{CC} =400 V			1.0	μs
Storage Time	t _{stg}	I _C =4A, I _{B1} =0.8A, I _{B2} =-1.6A, R _L =100Ω, V _{CC} =400V			3.0	μs
Fall Time	t _f	I _C =4A, I _{B1} =0.8A, I _{B2} =-1.6A, R _L =100Ω, V _{CC} =400V			0.7	μs

Switching Time Test Circuit







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