NPN Triple Diffused Planar Silicon Transistor



2SC3150

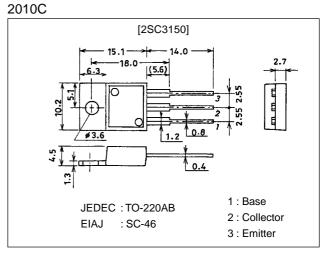
800V/3A Switching Regulator Applications

Features

- · High breakdown voltage ($V_{CBO} \ge 900V$).
- · Fast switching speed.
- \cdot Wide ASO.

Package Dimensions

unit:mm



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	VEBO		7	V
Collector Current	IC		3	A
Collector Current (Pulse)	I _{CP}	PW≤300µs, Duty Cycle≤10%	10	A
Base Current	Ι _Β		1.5	A
Collector Dissipation	PC	Tc=25°C	50	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	Onit
Collector Cutoff Current	I _{CBO}	V _{CB} =800V, I _E =0			10	μΑ
Emitter Cutoff Current	IEBO	V _{EB} =5V, I _C =0			10	μΑ
DC Current Gain	h _{FE} 1	$V_{CE}=5V, I_{C}=0.2A$	10*		40*	
	h _{FE} 2	V _{CE} =5V, I _C =1A	8			
Gain-Bandwidth Product	fT	V _{CE} =10V, I _C =0.2A		15		MHz
Output Capacitance	Cob	V _{CB} =10V, f=1MHz		60		pF

*: The h_{FE1} of the 2SC3150 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

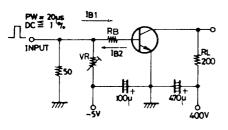
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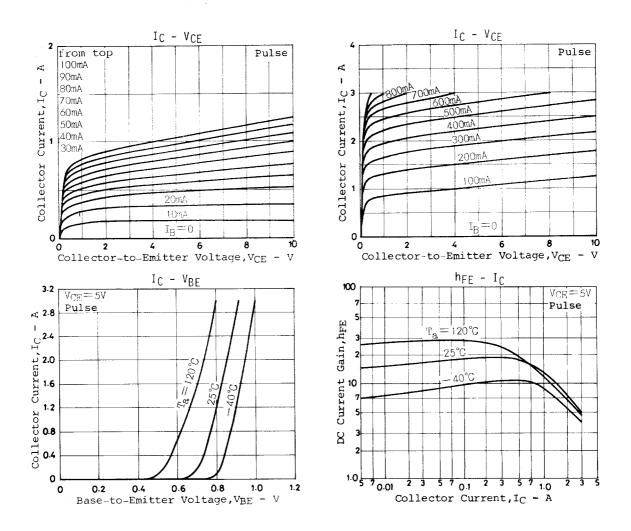
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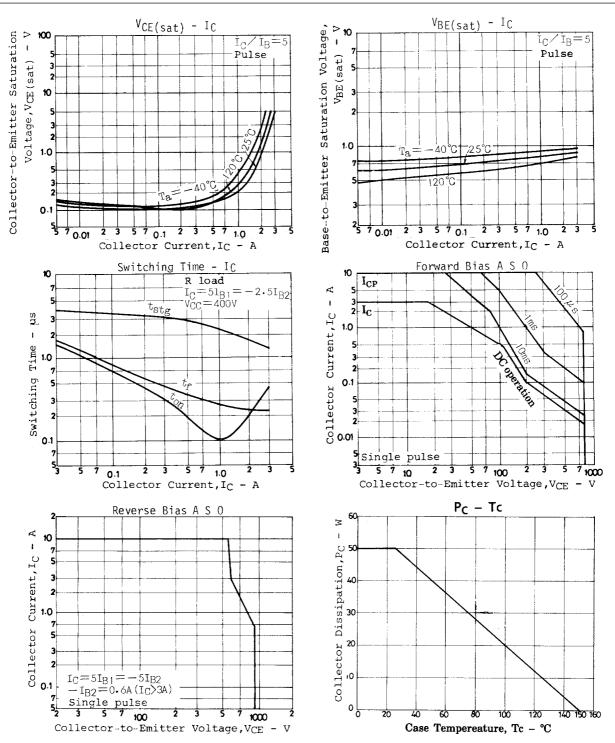
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	Unit
Collector-to-Emitter Saturation Voltage	V _{CE(sat)}	I _C =1.5A, I _B =0.3A			2.0	V
Base-to-Emitter Saturation Voltage	V _{BE(sat)}	I _C =1.5A, I _B =0.3A			1.5	V
Collector-to-Base Breakdown Voltage	V(BR)CBO	I _C =1mA, I _E =0	900			V
Collector-to-Emitter Breakdown Voltage	V(BR)CEO	I _C =5mA, R _{BE} =∞	800			V
Emitter-to-Base Breakdown Voltage	V(BR)EBO	IE=1mA, IC=0	7			V
Collector-to-Emitter Sustain Voltage	VCEO(sus)	I _C =3A, L=500μH, I _B =1A	800			V
Collector-to-Emitter Sustain Voltage	VCEX(sus)1	I _C =1A, I _{B1} =0.2A, I _{B2} =-0.2A, L=2mH, clamped	800			V
	VCEX(sus)2	I _C =0.5A, I _{B1} =0.1A, I _{B2} =-0.1A, L=5mH, clamped	900			V
Turn-ON Time	ton	$I_{C}=2A$, $I_{B1}=0.4A$, $I_{B2}=-0.8A$, $R_{L}=200\Omega$, $V_{CC}=400V$			1.0	μs
Storage Time	tstg	$I_{C}=2A$, $I_{B1}=0.4A$, $I_{B2}=-0.8A$, $R_{L}=200\Omega$, $V_{CC}=400V$			3.0	μs
Fall Time	t _f	$I_{C}=2A$, $I_{B1}=0.4A$, $I_{B2}=-0.8A$, $R_{L}=200\Omega$, $V_{CC}=400V$			0.7	μs

Switching Time Test Circuit



Unit (resistance : Ω , capacitance : F)





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