2SC4458



500V/7A Switching Regulator Applications

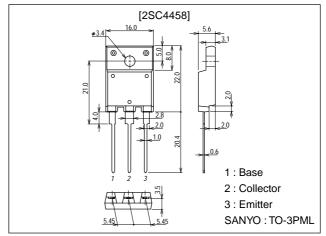
Features

- · High breakdown voltage, high reliability.
- · Fast switching speed.
- · Wide ASO.
- · Adoption of MBIT process.
- · Micaless package facilitating mounting.

Package Dimensions

unit:mm

2039D



Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CBO}		800	V
Collector-to-Emitter Voltage	VCEO		500	V
Emitter-to-Base Voltage	V _{EBO}		7	V
Collector Current	lС		7	А
Collector Current (Pulse)	I _{CP}	PW≤300μs, duty cycle≤10%	14	А
Base Current	I _B		3	А
Collector Dissipation	PC		3	W
		Tc=25°C	45	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	Office
Collector Cutoff Current	I _{CBO}	V _{CB} =500V, 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 =0.6A	15*		50*	
	h _{FE} 2	V _{CE} =5V, I _C =3A	8			

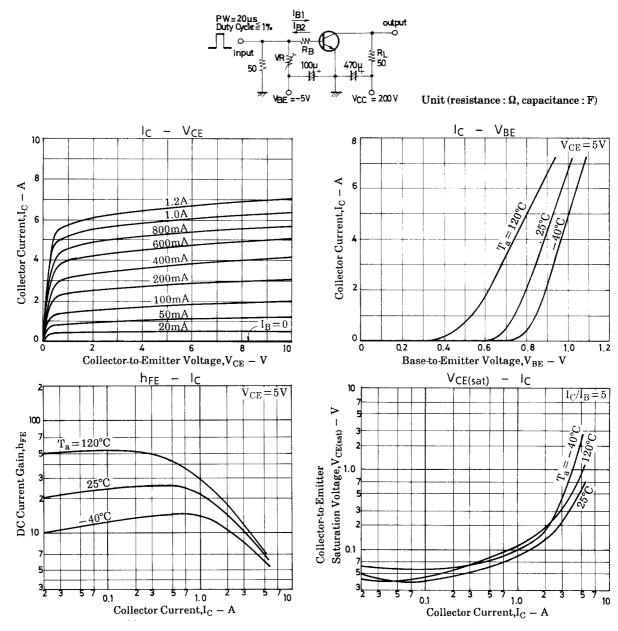
*: For the $h_{\text{FE}}1$ of the 2SC4458, specify two ranks or more in principle.

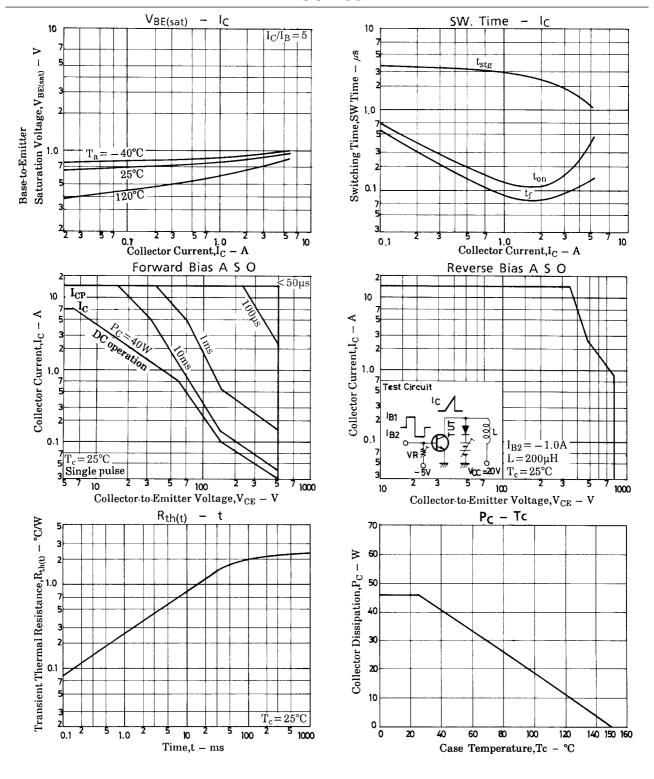
15 L 30 20 M 40 30 N 50

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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	1 Oille
Gain-Bandwidth Product	fT	V _{CE} =10V, I _C =0.6A		18		MHz
Output Capacitance	C _{ob}	V _{CB} =10V, f=1MHz		80		pF
Collector-to-Emitter Saturation Voltage	VCE(sat)	I _C =3A, I _B =0.6A			1	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 =1mA, I _E =0	800			V
Collector-to-Emitter Breakdown Voltage	V(BR)CEO	I _C =5mA, R _{BE} =∞	500			V
Emitter-to-Base Breakdown Voltage	V _{(BR)EBO}	I _E =1mA, I _C =0	7			V
Collector-to-Emitter Sustain Voltage	VCEX(sus)	I _C =2.5A, I _{B1} =-I _{B2} =1A, L=1mH, Clamped	500			V
Turn-ON Time	ton	V_{CC} =200V, $5I_{B1}$ =-2. $5I_{B2}$ = I_{C} =4A, R_{L} = 50Ω			0.5	μs
Storage Time	t _{stg}	V _{CC} =200V, 5l _{B1} =-2.5l _{B2} =l _C =4A, R _L =50Ω			3.0	μs
Fall Time	t _f	V _{CC} =200V, 5l _{B1} =-2.5l _{B2} =l _C =4A, R _L =50Ω			0.3	μs

Switching Time Test Circuit





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