2SC3086



500V/3A Switching Regulator Applications

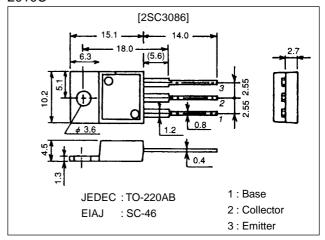
Features

- · High breakdown voltage (V_{CBO}≥800V).
- · Fast switching speed.
- · Wide ASO.

Package Dimensions

unit:mm

2010C



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	V _{CEO}		500	V
Emitter-to-Base Voltage	V _{EBO}		7	V
Collector Current	lС		3	А
Collector Current (Pulse)	I _{CP}	PW≤300μs, Duty Cycle≤10%	6	А
Base Current	I _B		1	А
Collector Dissipation	PC		1.75	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
			min	typ	max	
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 =0.3A	15*		50*	
De Guiteit Gain	h _{FE} 2	V _{CE} =5V, I _C =1.5A	8			
Collector-to-Emitter Saturation Voltage	VCE(sat)	I _C =1.5A, I _B =0.3A			1.0	V
Base-to-Emitter Saturation Voltage	V _{BE(sat)}	I _C =1.5A, I _B =0.3A			1.5	V

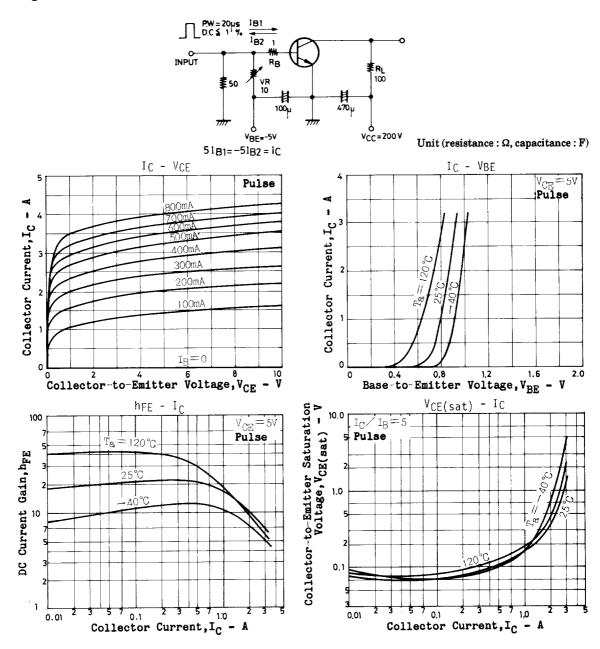
*: The $h_{FE}1$ of the 2SC3086 is classified as follows. When specifying the $h_{FE}1$ rank, specify two ranks or more in principle.

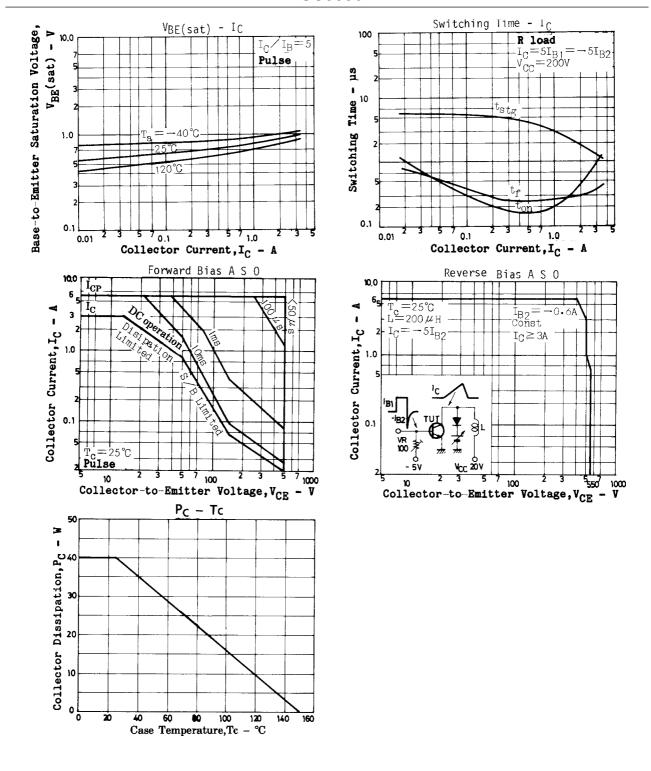
15 L 30 20 M 40 30 N 50

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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	Oill
Gain-Bandwidth Product	fT	V _{CE} =10V, I _C =0.3A		18		MHz
Output Capacitance	C _{ob}	V _{CB} =10V, f=1MHz		40		pF
Collector-to-Base Breakdown Voltage	V _(BR) CBO	$I_C=1$ mA, $I_E=0$	800			V
Collector-to-Emitter Breakdown Voltage	V(BR)CEO	I _C =1mA, 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	VCEO(sus)	I _C =3A, I _B =0.6A, L=50μH	500			V
Collector-to-Emitter Sustain Voltage	VCEX(sus)1	I _C =3A, I _{B1} =0.6A, L=200μH, I _{B2} =-0.6A, clamped	500			V
	VCEX(sus)2	I _C =0.6A, I _{B1} =0.12A, L=200μH, I _{B2} =-0.12A, clamped	550			V
Turn-ON Time	ton	I _C =2A, I _{B1} =0.4A, I _{B2} =-0.4A, R _L =100Ω, V _{CC} =200V			1.0	μs
Storage Time	t _{stg}	I_{C} =2A, I_{B1} =0.4A, I_{B2} =-0.4A, R_{L} =100 Ω , V_{CC} =200 V			3.0	μs
Fall Time	t _f	I_{C} =2A, I_{B1} =0.4A, I_{B2} =-0.4A, R_{L} =100 Ω , V_{CC} =200 V			1.0	μs

Switching Time Test Circuit





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