

SANYO	No. 1011B	2SC3087
NPN Triple Diffused Planar Silicon Transistor FOR SWITCHING REGULATORS		

Features

- High breakdown voltage ($V_{CBO} \geq 800V$)
- High switching speed
- Wide ASO

Absolute Maximum Ratings/ $T_a = 25^\circ C$

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	I _C	5	A
Peak collector current	i _{cp}	10	A
		PW ≤ 300 μs, Duty Cycle ≤ 10%	
Base current	I _B	2	A
Collector dissipation	P _C	1.75	W
		T _c = 25°C	
Junction temperature	T _j	150	°C
Storage temperature	T _{stg}	-55 ~ +150	°C

Electrical Characteristics/ $T_a = 25^\circ C$

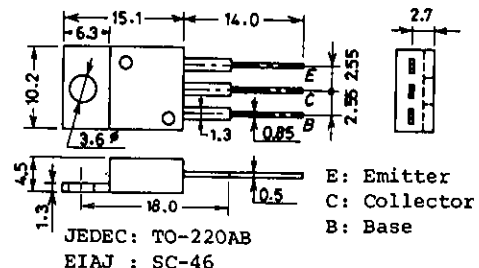
			min	typ	max	unit
Collector cutoff current	I _{CBO}	V _{CB} = 500 V, I _E = 0			10	μA
Emitter cutoff current	I _{EBO}	V _{EB} = 5 V, I _C = 0			10	μA
DC current gain	h _{FE} (1)	V _{CE} = 5 V, I _C = 0.6 A	15*			
	h _{FE} (2)	V _{CE} = 5 V, I _C = 3 A	8			
Collector-to-emitter saturation voltage	V _{CE(sat)}	I _C = 3 A, I _B = 0.6 A			1.0	V
Base-to-emitter saturation voltage	V _{BE(sat)}	I _C = 3 A, I _B = 0.6 A			1.5	V
Gain-bandwidth product	f _T	V _{CE} = 10 V, I _C = 0.6 A		18		MHz
Output capacitance	c _{ob}	V _{CB} = 10 V, f = 1 MHz		80		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 = 4 mA, R _{BE} = ∞	500			V
Emitter-to-base breakdown voltage	V _{(BR)EBO}	I _E = 1 mA, I _C = 0	7			V
Collector-to-emitter sustain voltage	V _{CEO(sus)}	I _C = 5 A, L = 50 μH, I _B = 1 A	500			V
Collector-to-emitter sustain voltage	V _{CEx(sus)}	I _C = 5 A, L = 200 μH, I _{B1} = -I _{B2}	500			V
	(1)	= 1 A, clamped				
Collector-to-emitter sustaining voltage	V _{CEx(sus)}	I _C = 1.2 A, L = 200 μH, I _{B1} = 0.24 A	550			V
	(2)	I _{B2} = -0.24 A, clamped				

Continued on next page.

*: The h_{FE}(1) of the 2SC3087 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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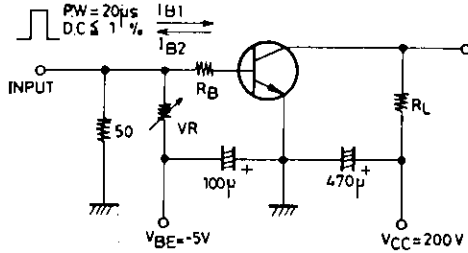
Package Dimensions 2010A
(unit: mm)



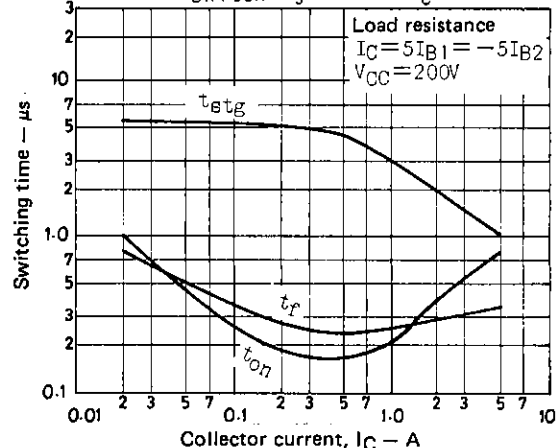
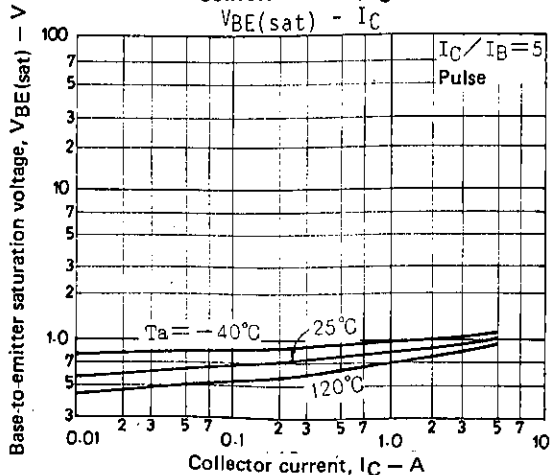
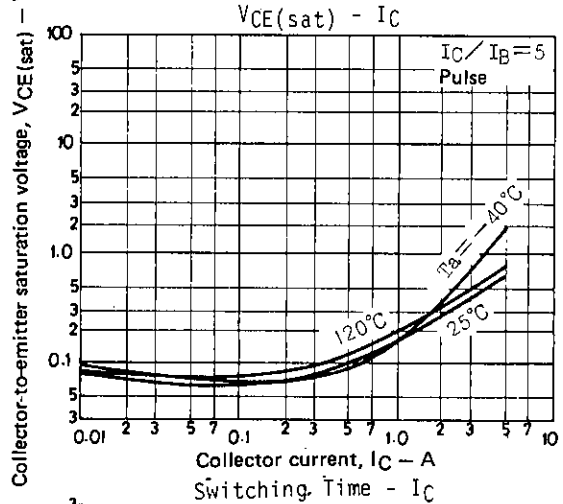
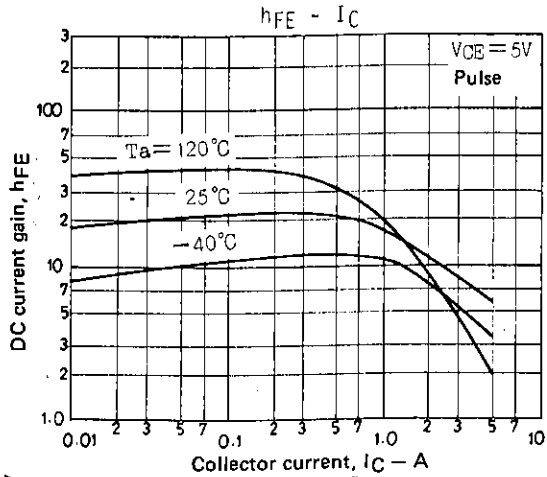
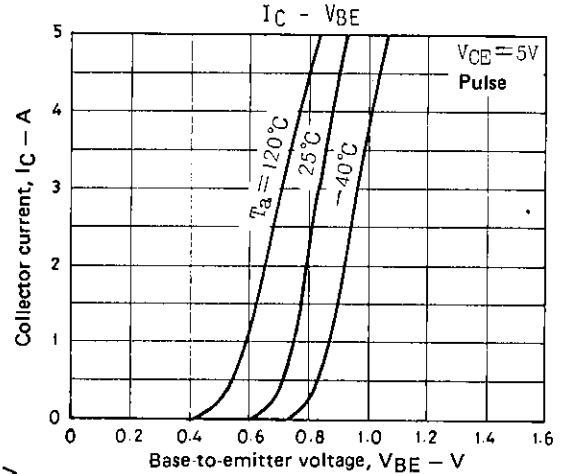
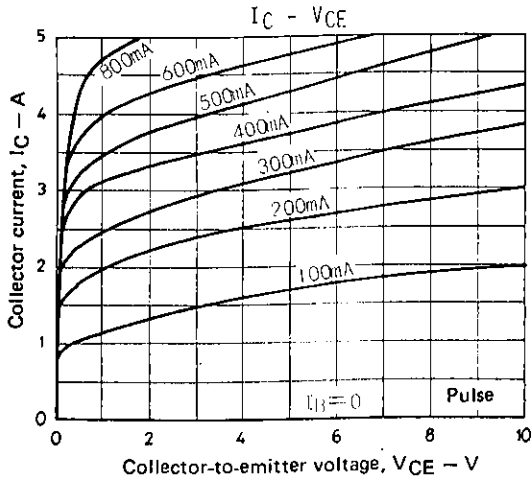
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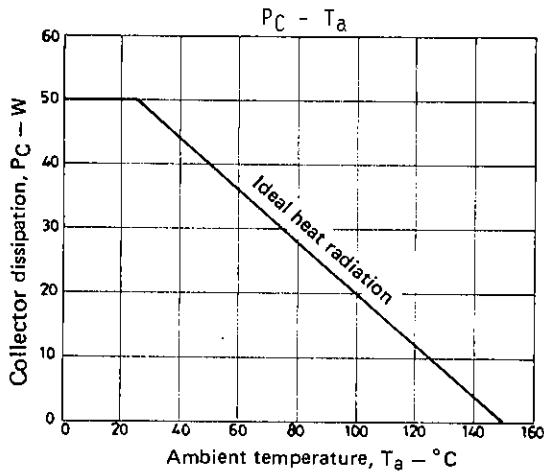
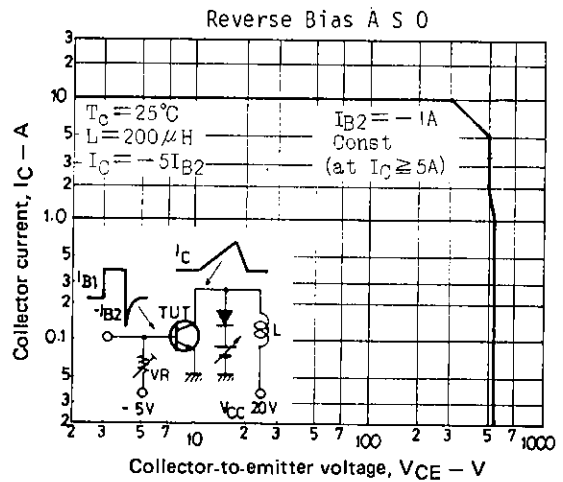
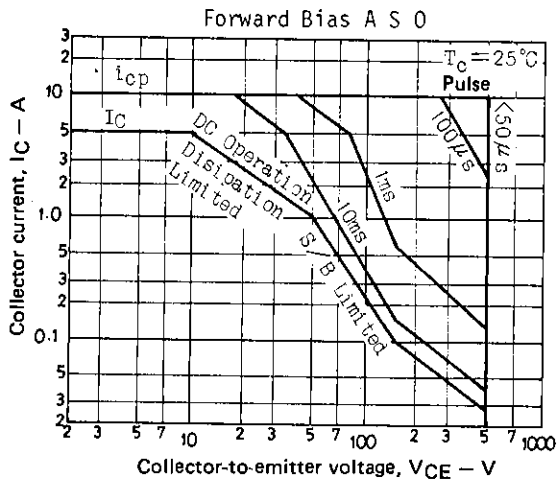
			min	typ	max	unit
Turn-on time	t_{on}	$I_C = 4 \text{ A}, I_{B1} = 0.8 \text{ A}, I_{B2} = -0.8 \text{ A},$ $R_L = 50 \Omega, V_{CC} = 200 \text{ V}$			1.0	μs
Storage time	t_{stg}	$I_C = 4 \text{ A}, I_{B1} = 0.8 \text{ A}, I_{B2} = -0.8 \text{ A},$ $R_L = 50 \Omega, V_{CC} = 200 \text{ V}$			3.0	μs
Fall time	t_f	$I_C = 4 \text{ A}, I_{B1} = 0.8 \text{ A}, I_{B2} = -0.8 \text{ A},$ $R_L = 50 \Omega, V_{CC} = 200 \text{ V}$			1.0	μs

Switching Time Test Circuit



Unit (Resistance : Ω , Capacitance : F) $5 I_{B1} = -5 I_{B2} = I_C$





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