

SANYO

No.2299A

2 S C 3 7 8 6

NPN Epitaxial Planar Type Silicon Transistor

DRIVER APPLICATIONS

Applications

- Suitable for use in switching of L load (motor drivers, printer hammer drivers, relay drivers)

Features

- High DC current gain
- Wide ASO
- On-chip zener diode of $60 \pm 10V$ between collector and base
- Uniformity in collector to base breakdown voltage
- Large inductive load handling capability

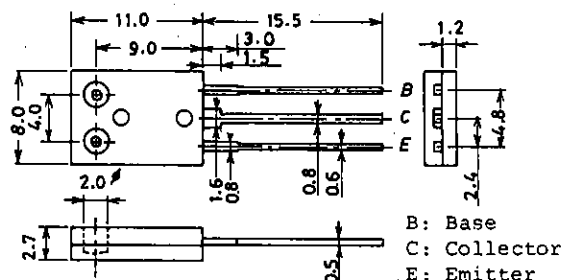
Absolute Maximum Ratings at $T_a = 25^\circ C$

			unit	
Collector to Base Voltage	V_{CBO}	*50	V	
Collector to Emitter Voltage	V_{CEO}	*50	V	
Emitter to Base Voltage	V_{EB0}	6	V	
Collector Current	I_C	3	A	
Peak Collector Current	i_{cp}	6	A	
Collector Dissipation	P_C	1.2	W	
	P_C	$T_c=25^{\circ}C$	20	W
Junction Temperature	T_j	150	$^{\circ}C$	
Storage Temperature	T_{stg}	-55 to +150	$^{\circ}C$	
*: On-chip zener diode ($60\pm 10V$)				

*: On-chip zener diode ($60 \pm 10V$)**Electrical Characteristics at $T_a = 25^\circ C$**

			min	typ	max	unit
Collector Cutoff Current	I_{CB0}	$V_{CB} = 40V, I_E = 0$			10	μA
Emitter Cutoff Current	I_{EB0}	$V_{EB} = 5V, I_C = 0$			2	mA
DC Current Gain	h_{FE}	$V_{CE} = 5V, I_C = 1.5A$	1000	4000		
Gain-Bandwidth Product	f_T	$V_{CE} = 5V, I_C = 1.5A$		180		MHz
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = 1.5A, I_B = 6mA$		1.0	1.5	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C = 1.5A, I_B = 6mA$			2.0	V
Inductive Load	E s/b	$L = 100mH, R_{BE} = 100ohms$	25			mJ
Handling Capability						
C-B Breakdown Voltage	$V_{(BR)CB0}$	$I_C = 100\mu A, I_E = 0$	50	60	70	V
C-E Breakdown Voltage	$V_{(BR)CE0}$	$I_C = 1mA, R_{BE} = \infty$	50	60	70	V

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**Package Dimensions 2043A
(unit: mm)**

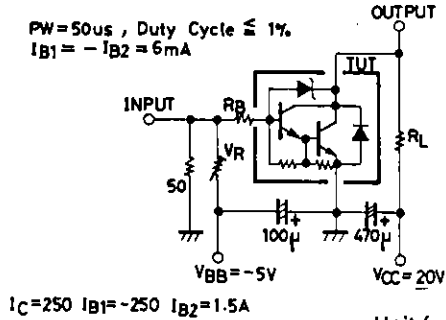
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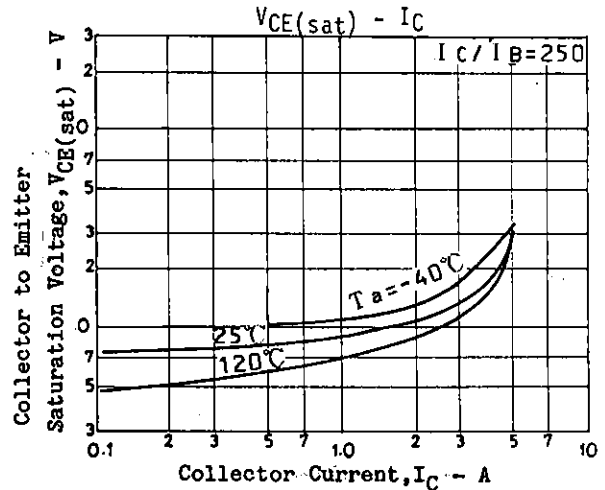
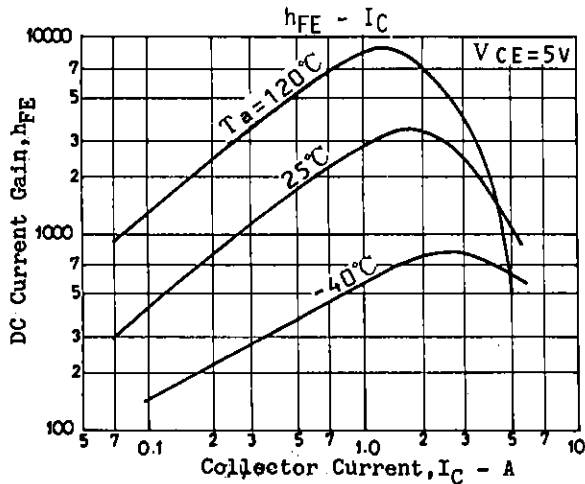
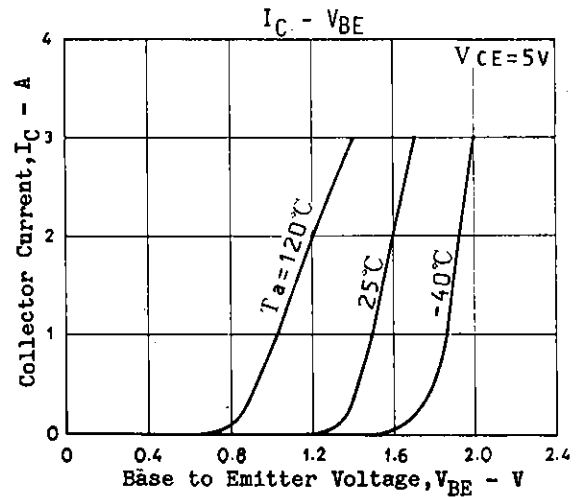
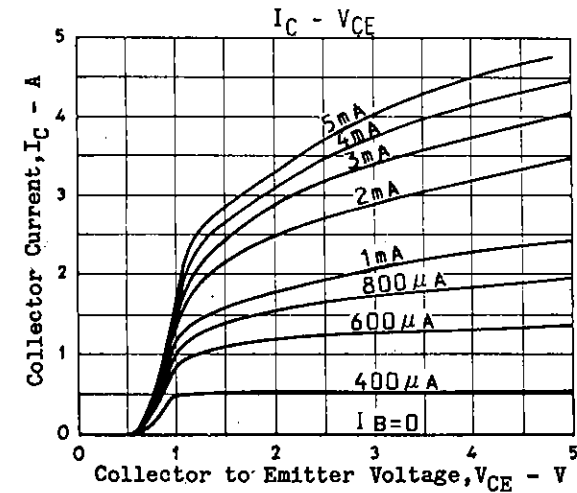
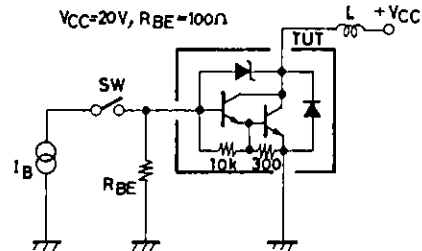
			min	typ	max	unit
Turn-on Time	t_{on}	See specified Test Circuit.		0.2		us
Storage Time	t_{stg}			3.5		us
Fall Time	t_f			0.7		us

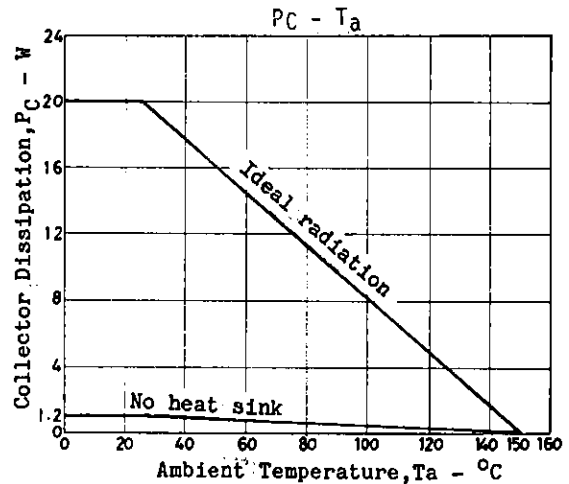
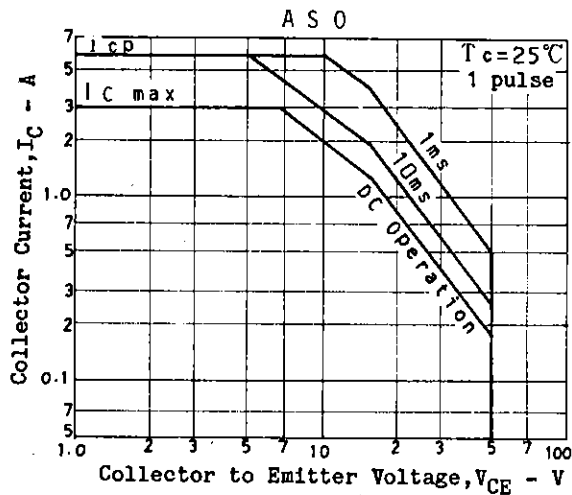
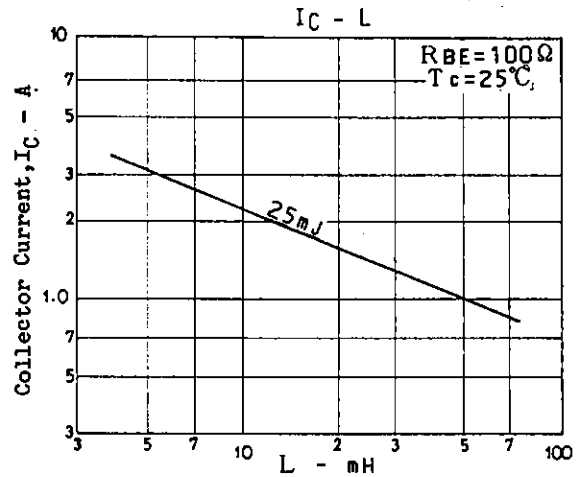
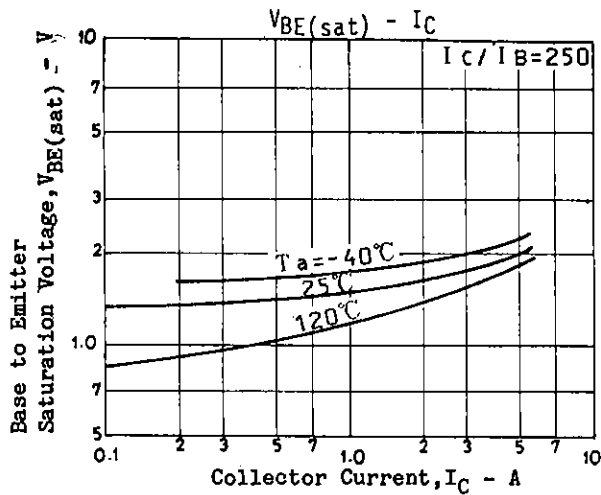
Switching Time Test Circuit



Unit (resistance: Ω , capacitance: F)

Es/b Test Circuit





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