

SANYO	No.2230B	2SD1838
		NPN Triple Diffused Planar Silicon Darlington Transistor

Driver Applications

Applications

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

Features

- High DC current gain.
- Large current capacity.
- Wide ASO.
- On-chip Zener diode of $60 \pm 10V$ between collector and base.
- Uniformity in collector-to-base breakdown voltage due to adoption of accurate impurity diffusion process.
- High inductive load handling capability.
- Micaless package facilitating mounting.

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_{EBO}	6	V
Collector Current	I_C	5	A
Collector Current (Pulse)	I_{CP}	8	A
Base Current	I_B	0.5	A
Collector Dissipation	P_C	2.0	W
		25	W
Junction Temperature	T_j	150	$^\circ C$
Storage Temperature	T_{stg}	-55 to +150	$^\circ C$

$T_c = 25^\circ C$

※ : With Zener diode ($60 \pm 10V$)

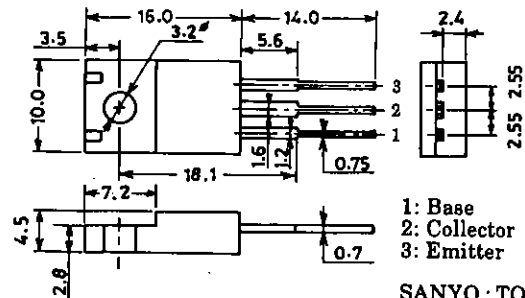
Electrical Characteristics at $T_a = 25^\circ C$

			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = 40V, I_E = 0$			100	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 5V, I_C = 0$			3	mA
DC Current Gain	h_{FE}	$V_{CE} = 3V, I_C = 2.5A$	1000	4000		
Gain-Bandwidth Product	f_T	$V_{CE} = 5V, I_C = 2.5A$		20		MHz

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Package Dimensions 2041A

(unit : mm)

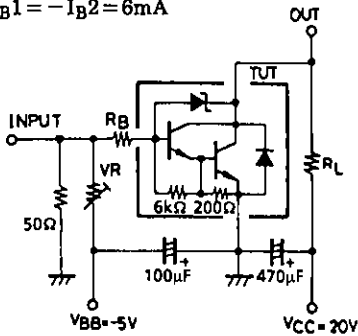


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		min	typ	max	unit
C-E Saturation Voltage	$V_{CE(sat)}$ $I_C=2.5A, I_B=5mA$	0.9	1.5		V
B-E Saturation Voltage	$V_{BE(sat)}$ $I_C=2.5A, I_B=5mA$			2.0	V
C-B Breakdown Voltage	$V_{(BR)CBO}$ $I_C=5mA, I_E=0$	50	60	70	V
C-E Breakdown Voltage	$V_{(BR)CEO}$ $I_C=50mA, R_{BE}=\infty$	50	60	70	V
Inductive Load Handling Capability	E_s/b $L=100mH, R_{BE}=100\Omega$	50			mJ
Rise Time	t_{on} (See specified Test Circuit.)		0.6		μs
Storage Time	t_{stg} $V_{CC}=20V, I_C=3.0A$		4.0		μs
Fall Time	t_f $I_{B1}=-I_{B2}=6mA$		1.5		μs

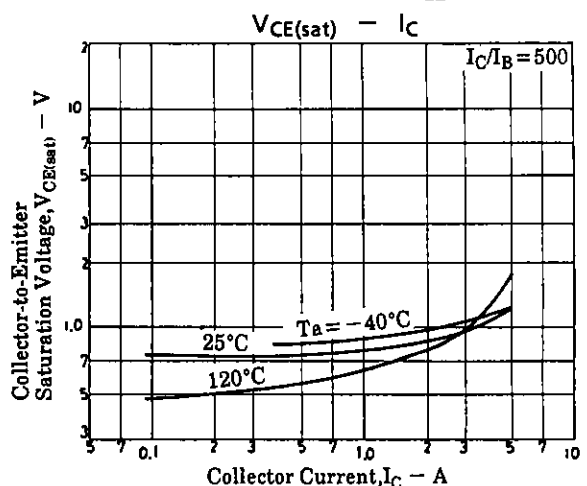
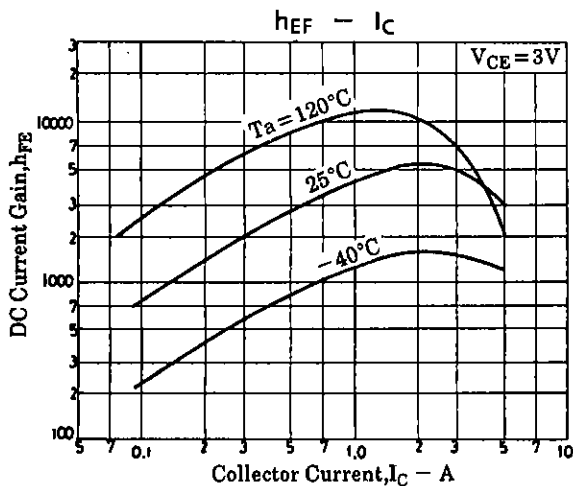
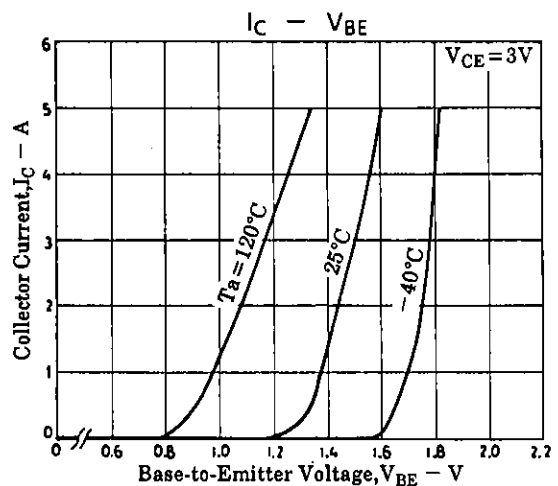
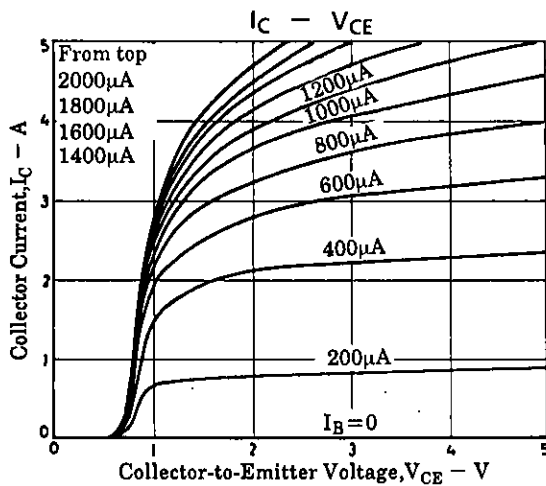
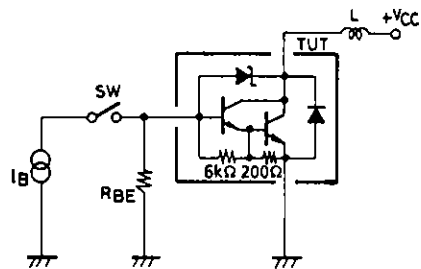
Specified Test Circuit

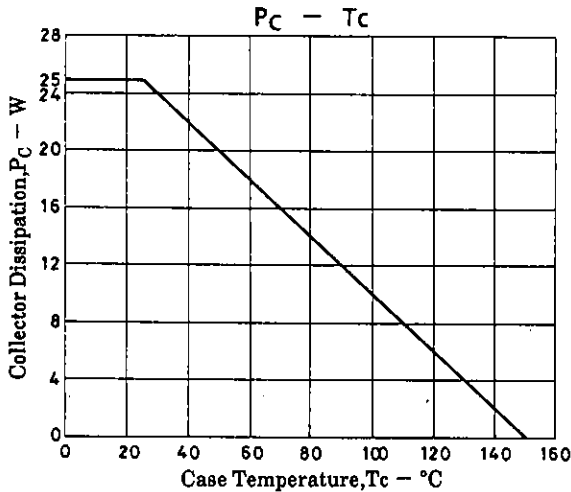
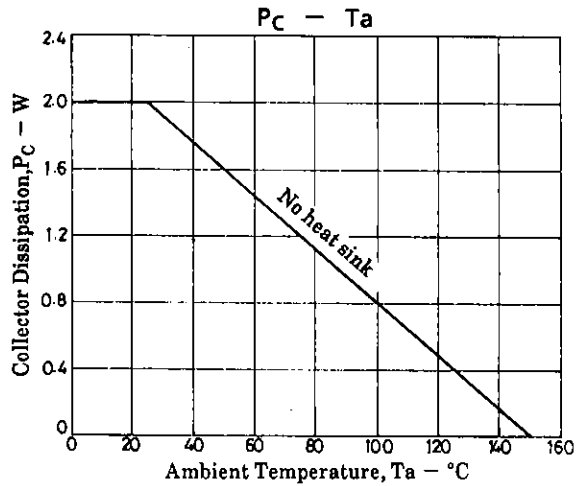
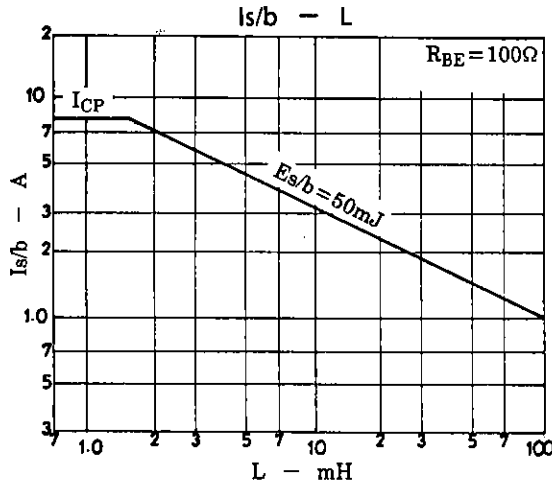
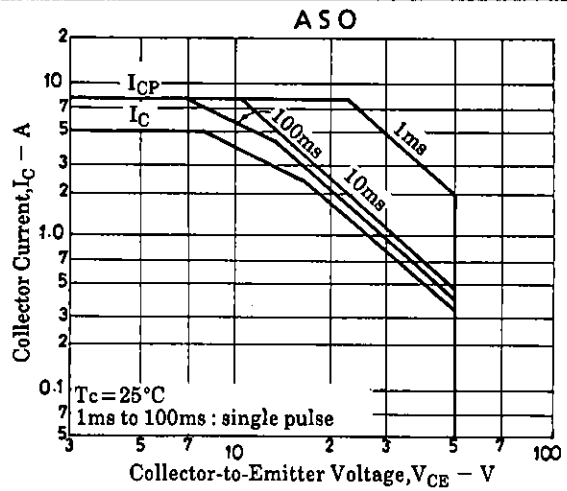
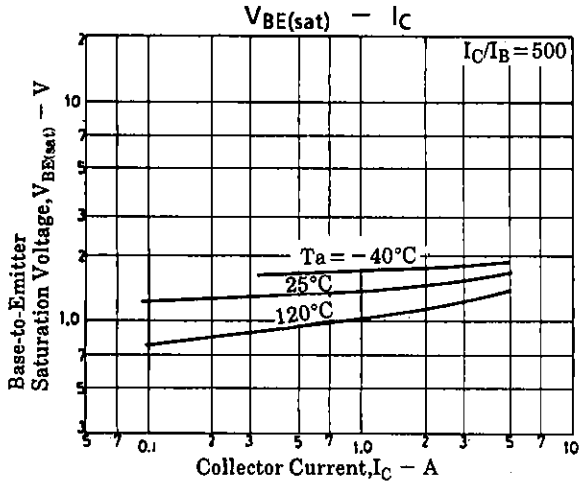
PW = 50 μs , Duty Cycle $\leq 1\%$
 $I_{B1} = -I_{B2} = 6mA$



Es/b Test Circuit

$V_{CC}=20V, R_{BE}=100\Omega$
 $L=100mH$





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