

SANYO	No.3196	2SD2176
		NPN Epitaxial Planar Silicon Transistor
Motor Driver Applications		

Features

- Darlington connection
- On-chip zener diode of $60 \pm 10V$ between collector and base
- High inductive load handling capability
- Small-sized package

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

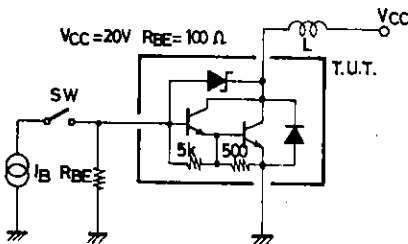
			unit
Collector to Base Voltage	V_{CB0}	On-chip zener diode ($60 \pm 10V$)	50 V
Collector to Emitter Voltage	V_{CEO}	"	50 V
Emitter to Base Voltage	V_{EBO}		6 V
Collector Current	I_C		1.2 A
Collector Current(Pulse)	I_{CP}		2.5 A
Base Current	I_B		0.2 A
Collector Dissipation	P_C	Mounted on ceramic board ($250mm^2 \times 0.8mm$)	1.3 W
Junction Temperature	T_j		150 $^\circ C$
Storage Temperature	T_{stg}		-55 to +150 $^\circ C$

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

			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = 40V, I_E = 0$			10	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 5V, I_C = 0$			2	mA
DC Current Gain	h_{FE}	$V_{CE} = 3V, I_C = 500mA$	1000		20000	
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = 500mA, I_B = 1mA$		1.0	1.5	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C = 500mA, I_B = 1mA$		1.5	2	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 100\mu A, I_E = 0$	50		70	V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1mA, R_{BE} = \infty$	50		70	V
Inductive Load Handling Capability	Es/b	$L = 30mH, R_{BE} = 100\Omega$	15			mJ

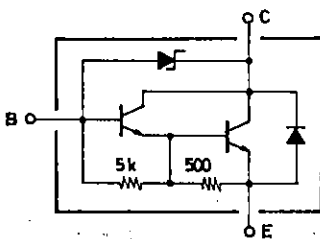
Marking : DQ

Es/b Test Circuit



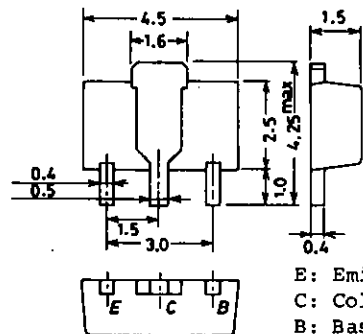
Unit (Resistance : Ω)

Electrical Connection



Unit (Resistance : Ω)

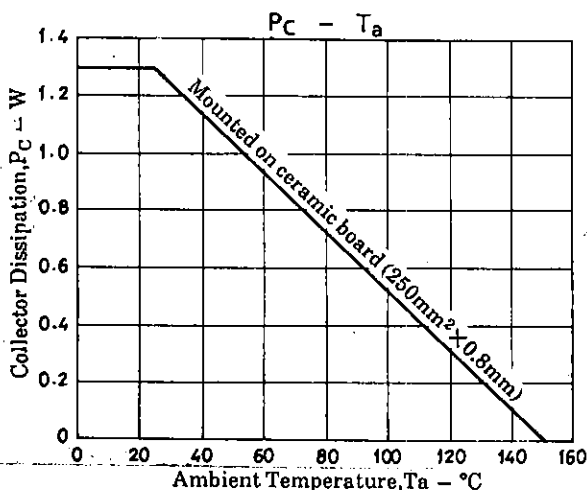
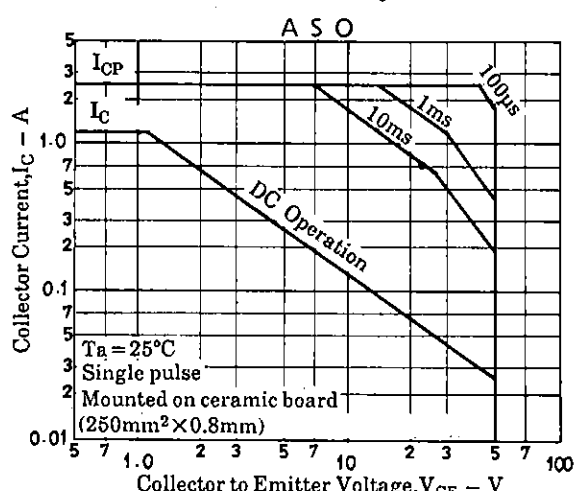
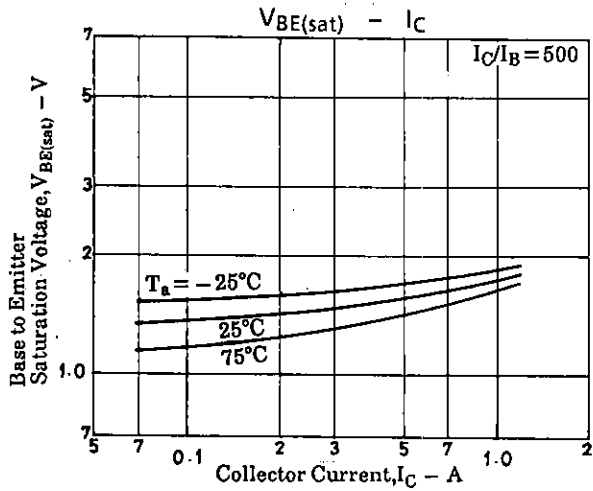
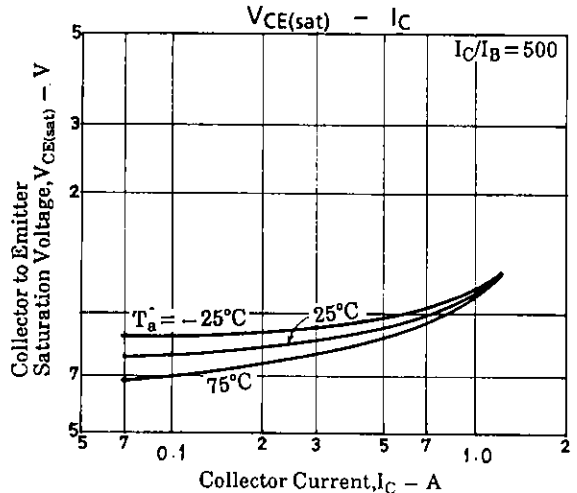
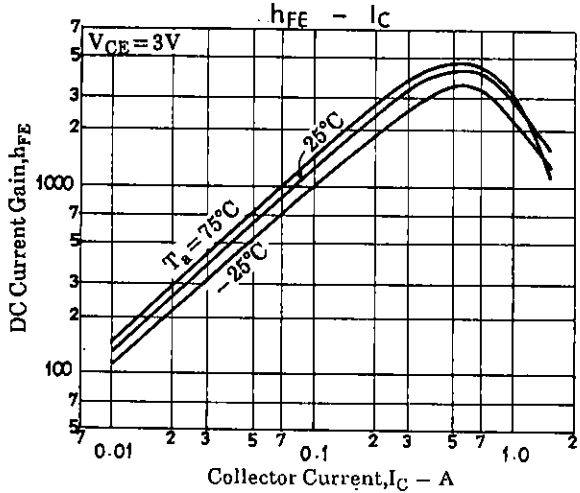
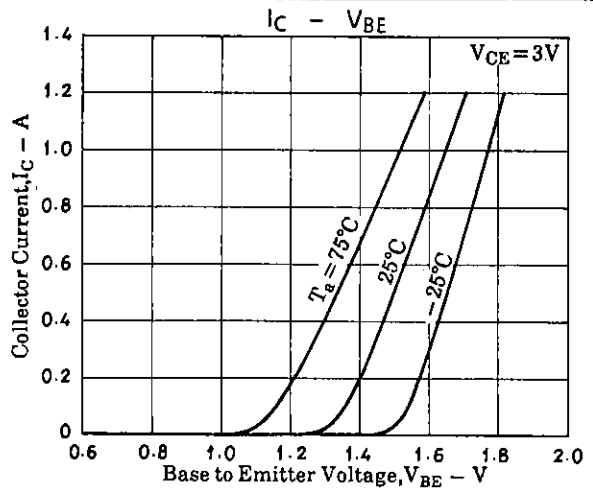
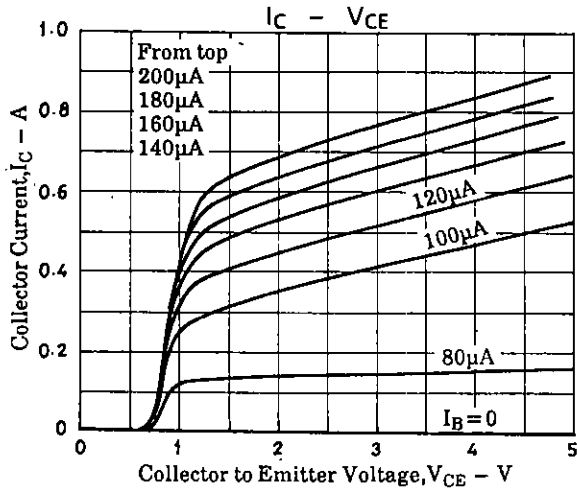
Package Dimensions 2038
(unit : mm)



E: Emitter
C: Collector
B: Base

SANYO: PCP

(Bottom View)



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