Ordering number:EN3196

NPN Epitaxial Planar Silicon Transistor

2SD2176

Motor Driver Applications

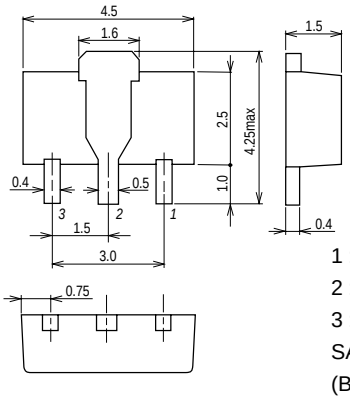
Features

- Darlington connection.
- On-chip Zener diode of 60±10V between collector and base.
- High inductive load handling capability.
- Small-sized package.

Package Dimensions

unit:mm

2038A



Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}	On-chip Zener diode (60±10V)	50	V
Collector-to-Emitter Voltage	V_{CEO}	On-chip Zener diode (60±10V)	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 (250mm²×0.8mm)	1.3	W
Junction Temperature	Tj		150	˚C
Storage Temperature	Tstg		–55 to +150	˚C

Electrical Characteristics at Ta = 25˚C

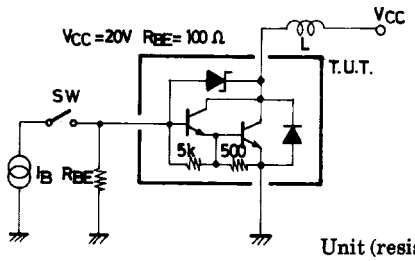
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=40V, I_E=0			10	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=5V, I_C=0			2	mA
DC Current Gain	h_{FE}	V_{CE}=3V, I_C=500mA	1000		20000	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=500mA, I_B=1mA		1.0	1.5	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=500mA, I_B=1mA		1.5	2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=100μA, I_E=0	50		70	V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=1mA, R_{BE}=∞	50		70	V
Inductive Load Handling Capability	Es/b	L=30mH, R_{BE}=100Ω	15			mJ

Marking : DQ

SANYO Electric Co.,Ltd. Semiconductor Bussiness Headquaters

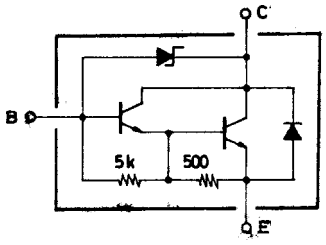
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

Es/b Test Circuit



Unit (resistance : Ω)

Electrical Connection



Unit (resistance : Ω)