

Silicon NPN Power Transistors

2SD2093

DESCRIPTION

- With TO-3PML package
- DARLINGTON
- Complement to type 2SB1388
- High DC current gain
- Low saturation voltage
- Large current capacity and large ASO

APPLICATIONS

- Motor drivers
- Printer hammer drivers
- Relay drivers,
- Voltage regulator control

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

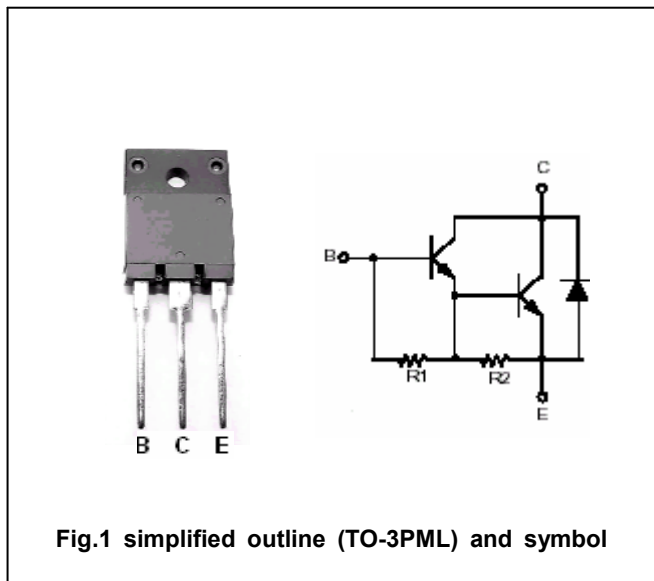


Fig.1 simplified outline (TO-3PML) and symbol

Absolute maximum ratings(Ta=25°C)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V _{CB0}	Collector-base voltage	Open emitter	110	V
V _{CEO}	Collector-emitter voltage	Open base	100	V
V _{EBO}	Emitter-base voltage	Open collector	6	V
I _C	Collector current		10	A
I _{CM}	Collector current-peak		15	A
P _C	Collector power dissipation	T _C =25°C	45	W
			3.0	
T _j	Junction temperature		150	°C
T _{stg}	Storage temperature		-55~150	°C

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CHARACTERISTICS

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 $T_j=25^\circ\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V_{CEsat}	Collector-emitter saturation voltage	$I_C=5A; I_B=10m A$		0.9	1.5	V
V_{BEsat}	Base-emitter saturation voltage	$I_C=5A; I_B=10m A$			2.0	V
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_C=5mA; I_B=0$	110			V
$V_{(BR)CBO}$	Collector-base breakdown voltage	$I_C=50mA; R_{BE}=\infty$	100			V
I_{EBO}	Emitter cut-off current	$V_{EB}=5V; I_C=0$			3.0	mA
I_{CBO}	Collector cut-off current	$V_{CB}=80V; I_E=0$			0.1	mA
h_{FE}	DC current gain	$I_C=5 A; V_{CE}=3V$	1500	4000		
f_T	Transition frequency	$I_C=5 A; V_{CE}=5V$		20		MHz

Switching times

t_{on}	Turn-on time	$I_C=5A I_{B1}=-I_{B2}=10mA$ $V_{CC}=50V, R_L=10\Omega$		0.6		μs
t_s	Storage time			4.8		μs
t_f	Fall time			1.6		μs

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PACKAGE OUTLINE

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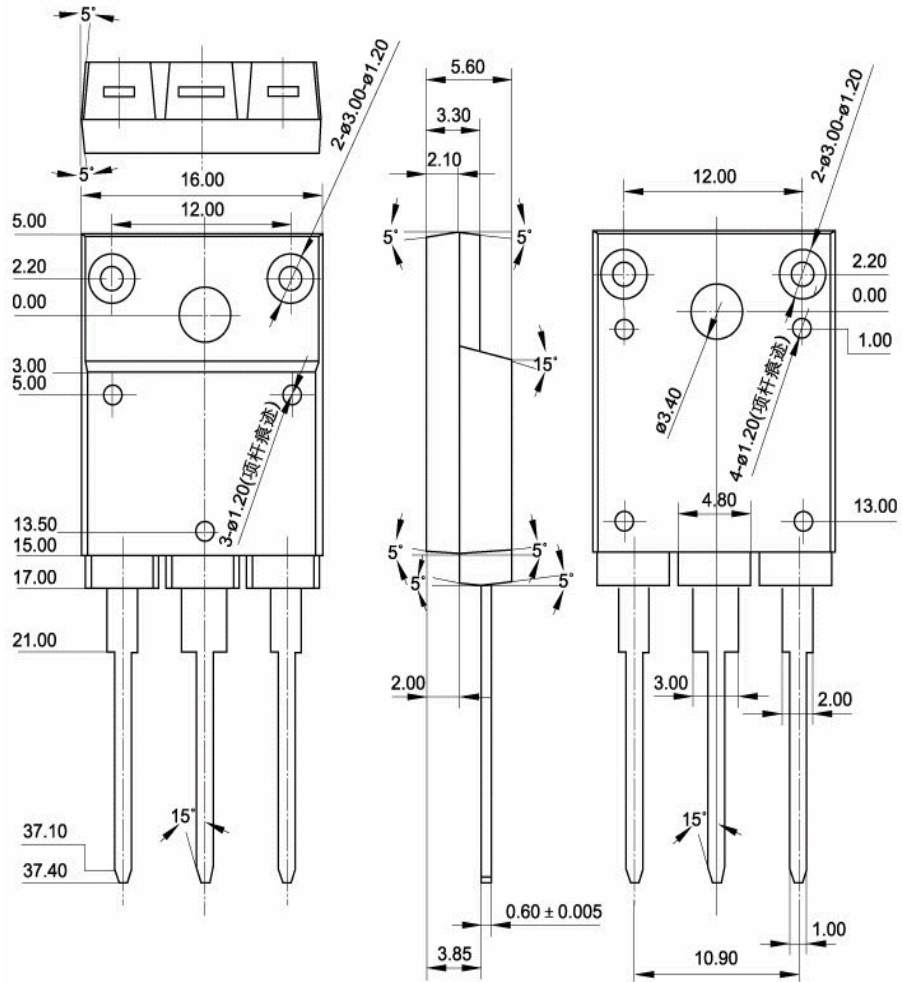


Fig.2 Outline dimensions