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

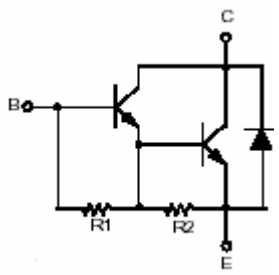

Fig.1 simplified outline (TO-3PML) and symbol

Absolute maximum ratings(Ta=25□)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	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□	45	W
			3.0	
T_j	Junction temperature		150	□
T_{stg}	Storage temperature		-55~150	□

CHARACTERISTICS

Tj=25□ 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}=∞	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=10Ω		0.6		μs
t_s	Storage time			4.8		μs
t_f	Fall time			1.6		μs

PACKAGE OUTLINE

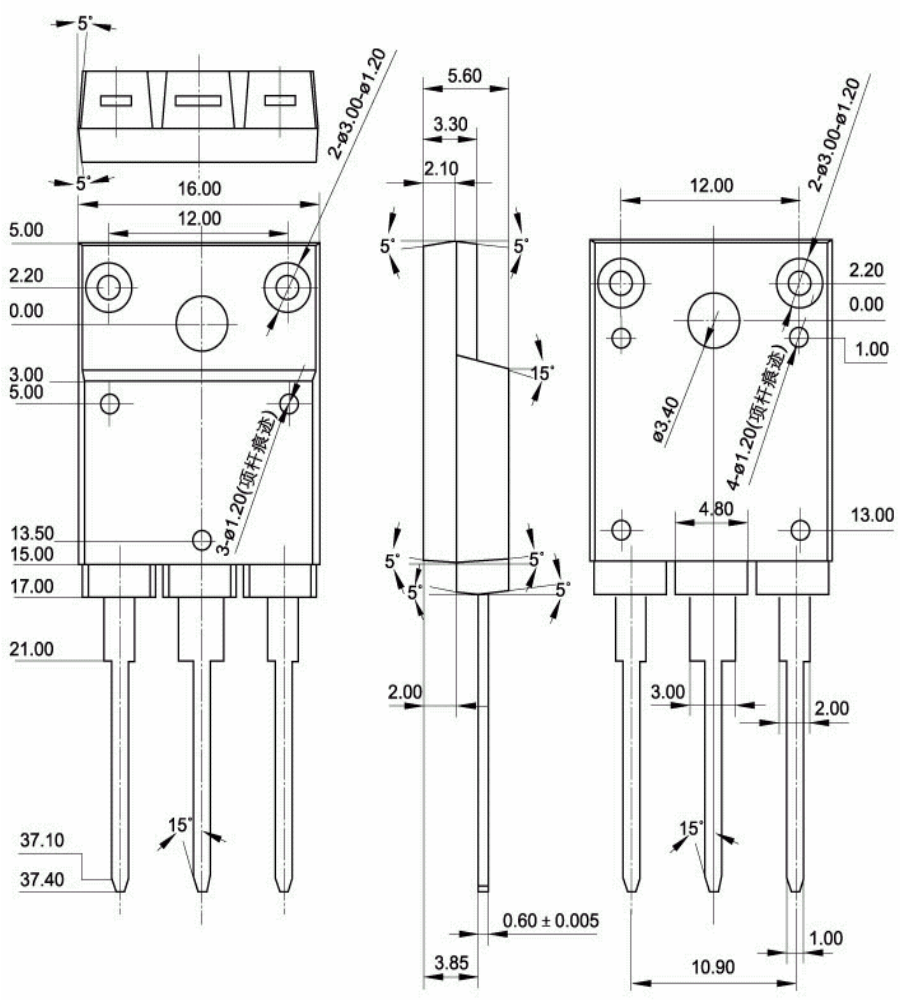

Fig.2 Outline dimensions