

Silicon NPN Power Transistor

3DD523

DESCRIPTION

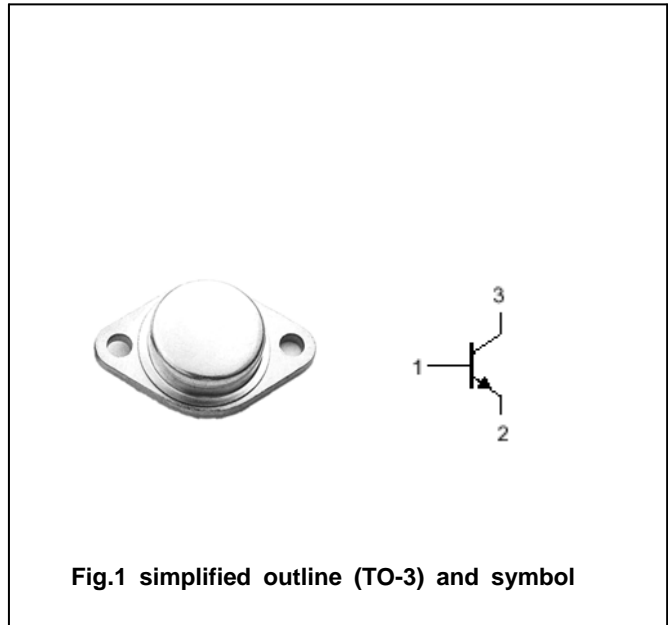
- With TO-3 package
- DC Current Gain $-h_{FE} = 20-70 @ I_C = 4 \text{ A dc}$
- Collector–Emitter Saturation Voltage - $V_{CE(sat)} = 1.1 \text{ Vdc (Max) @ } I_C = 4 \text{ A dc}$
- Excellent Safe Operating Area

APPLICATIONS

- Designed for general–purpose switching and amplifier applications.

PINNING

PIN	DESCRIPTION
1	Base
2	Emitter
3	Collector



Absolute maximum ratings(Ta=°C)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	150	V
V_{CEO}	Collector-emitter voltage	Open base	150	V
V_{EBO}	Emitter-base voltage	Open collector	7	V
I_C	Collector current		10	A
P_C	Collector power dissipation	$T_C=25^\circ\text{C}$	100	W
T_j	Junction temperature		150	°C
T_{stg}	Storage temperature		-65~200	°C

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	VALUE	UNIT
$R_{th j-c}$	Thermal resistance junction to case	1.52	°C/W

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CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEQ(SUS)}$	Collector-emitter sustaining voltage	$I_C=0.2A ; I_B=0$	60			V
V_{CER}	Collector-emitter sustaining voltage	$I_C=0.2A ; R_{BE}=100\ \Omega$	70			V
$V_{CEsat-1}$	Collector-emitter saturation voltage	$I_C=4A ; I_B=0.4A$			1.1	V
$V_{CEsat-2}$	Collector-emitter saturation voltage	$I_C=10A ; I_B=3.3A$			3.0	V
V_{BE}	Base-emitter on voltage	$I_C=4A ; V_{CE}=4V$			1.5	V
I_{CEO}	Collector cut-off current	$V_{CE}=30V ; I_B=0$			0.7	mA
I_{CEX}	Collector cut-off current	$V_{CE}=100V ; V_{BE(off)}=1.5V$ $T_C=150^{\circ}\text{C}$			1.0 5.0	mA
I_{EBO}	Emitter cut-off current	$V_{EB}=7V ; I_C=0$			5.0	mA
h_{FE-1}	DC current gain	$I_C=5A ; V_{CE}=5V$	55		80	
h_{FE-2}	DC current gain	$I_C=10A ; V_{CE}=4V$	5.0			
$I_{s/b}$	Second breakdown collector current With base forward biased	$V_{CE}=40V_{dc}, t=1.0s,$ Nonrepetitive	2.87			A
f_T	Transition frequency	$I_C=0.5A ; V_{CE}=10V$	2.5			MHz

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PACKAGE OUTLINE

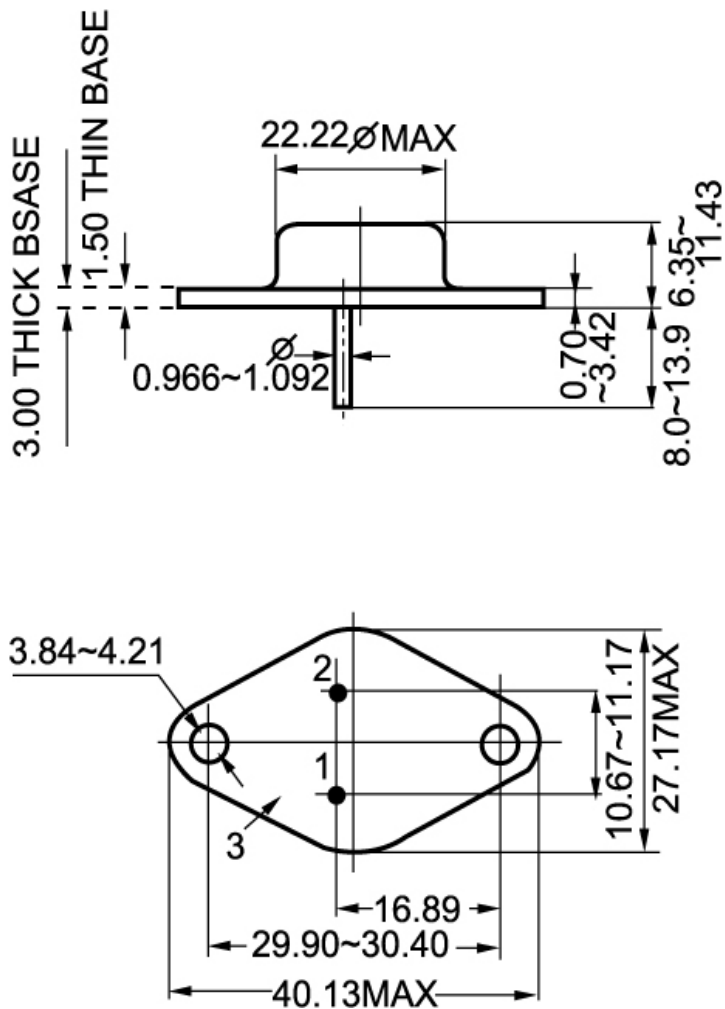


Fig.2 outline dimensions (unindicated tolerance: ± 0.1 mm)