

Silicon NPN Power Transistors

2SD1409

DESCRIPTION

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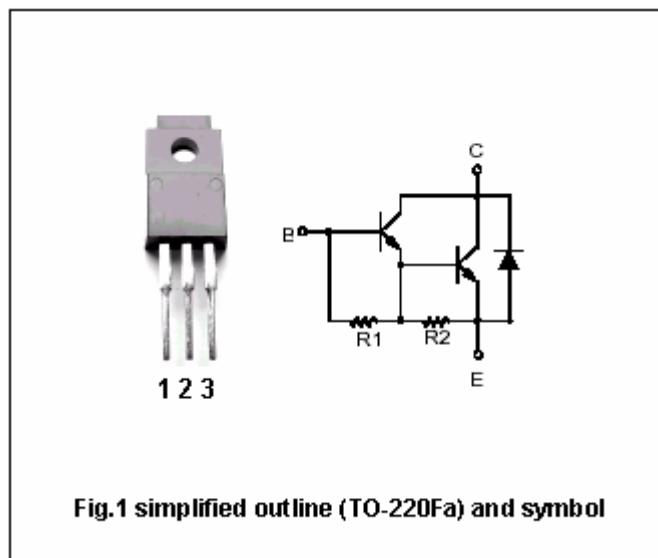
- With TO-220Fa package
- High DC current gain
- DARLINGTON

APPLICATIONS

- Igniter applications
- High voltage switching applications

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

Absolute maximum ratings($T_a=25^\circ\text{C}$)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	600	V
V_{CEO}	Collector -emitter voltage	Open base	400	V
V_{EBO}	Emitter-base voltage	Open collector	5	V
I_C	Collector current		6	A
I_B	Base current		1	A
P_C	Collector power dissipation	$T_C=25^\circ\text{C}$	25	W
		$T_a=25^\circ\text{C}$	2.0	
T_j	Junction temperature		150	$^\circ\text{C}$
T_{stg}	Storage temperature		-55~150	$^\circ\text{C}$

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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
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_C=10\text{mA}; I_B=0$	400			V
V_{CEsat}	Collector-emitter saturation voltage	$I_C=4\text{A}; I_B=0.04\text{A}$			2.0	V
V_{BEsat}	Base-emitter saturation voltage	$I_C=4\text{A}; I_B=0.04\text{A}$			2.5	V
V_{ECF}	Emitter-collector diode forward voltage	$I_E=4\text{A}; I_B=0$			3.0	V
I_{CBO}	Collector cut-off current	$V_{CB}=600\text{V}; I_E=0$			0.5	mA
I_{EBO}	Emitter cut-off current	$V_{EB}=5\text{V}; I_C=0$			3	mA
h_{FE-1}	DC current gain	$I_C=2\text{A}; V_{CE}=2\text{V}$	600			
h_{FE-2}	DC current gain	$I_C=4\text{A}; V_{CE}=2\text{V}$	100			
C_{OB}	Collector output capacitance	$f=1\text{MHz}; V_{CB}=50\text{V}; I_E=0$		35		pF

Switching times

t_{on}	Turn-on time	$I_{B1}=-I_{B2}=0.04\text{A}$ $V_{CC}=100\text{V}, R_L=25\Omega$		1		μs
t_{stg}	Storage time			8		μs
t_f	Fall time			5		μs

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PACKAGE OUTLINE

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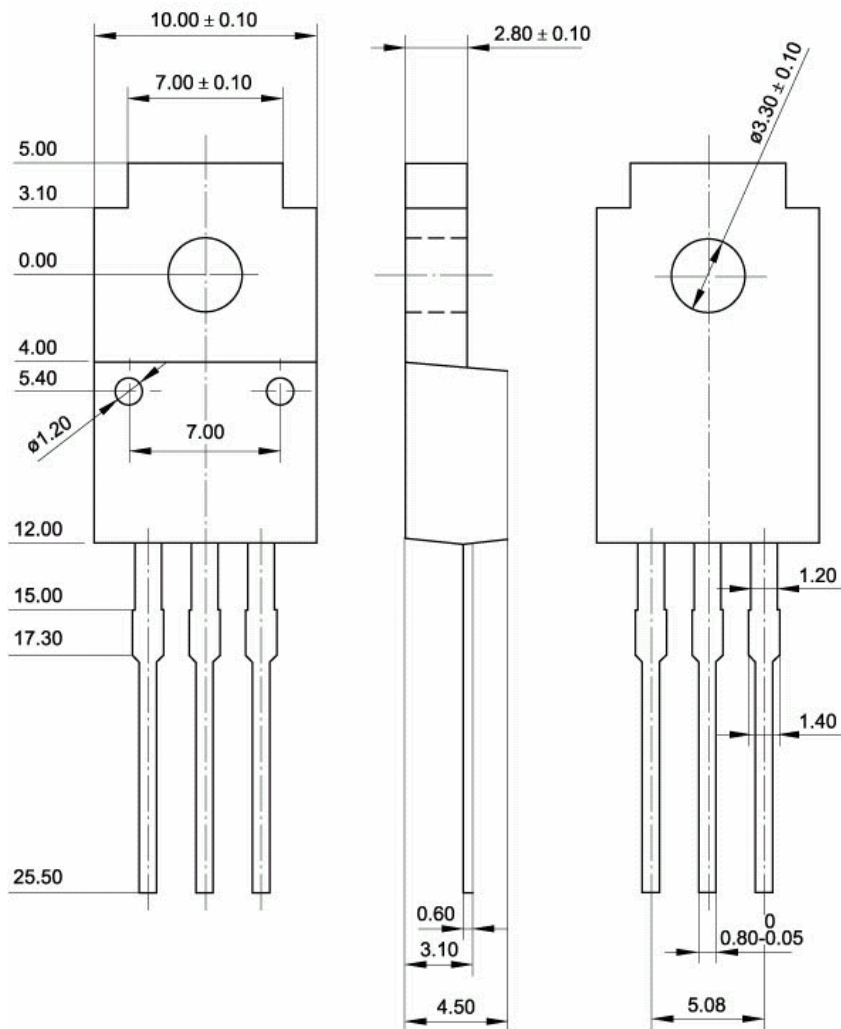


Fig.2 outline dimensions (unindicated tolerance:±0.15 mm)