

Silicon NPN Power Transistors

2SD1789

DESCRIPTION

- With ITO-220 package
- Switching power transistor
- DARLINGTON

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

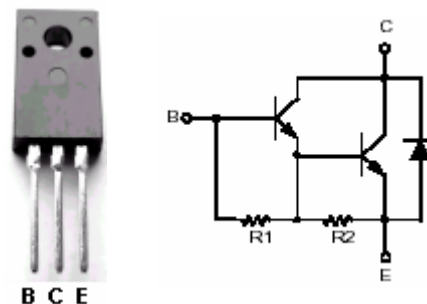


Fig.1 simplified outline (ITO-220) and symbol

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

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	200	V
V_{CEO}	Collector-emitter voltage	Open base	200	V
V_{EBO}	Emitter-base voltage	Open collector	7	V
I_C	Collector current		± 4	A
I_{CM}	Collector current-Peak		± 6	A
I_B	Base current		0.3	A
I_{BM}	Base current-Peak		0.5	A
P_T	Total power dissipation	$T_C=25^\circ\text{C}$	25	W
T_j	Junction temperature		150	$^\circ\text{C}$
T_{stg}	Storage temperature		-55~150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal resistance junction to case	5.0	$^\circ\text{C}/\text{W}$

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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	$I_C = 1\text{A}; I_B = 2\text{mA}$			1.5	V
V_{BEsat}	Base-emitter saturation voltage	$I_C = 1\text{A}; I_B = 2\text{mA}$			2.0	V
I_{CBO}	Collector cut-off current	$V_{CB} = 200\text{V}; I_E = 0$			0.1	mA
I_{CEO}	Collector cut-off current	$V_{CE} = 200\text{V}; I_B = 0$			0.1	mA
I_{EBO}	Emitter cut-off current	$V_{EB} = 7\text{V}; I_C = 0$			5	mA
h_{FE}	DC current gain	$I_C = 1\text{A}; V_{CE} = 3\text{V}$	1500		30000	
f_T	Transition frequency	$I_C = 0.4\text{A}; V_{CE} = 10\text{V}$		20		MHz

Switching times

t_{on}	Turn-on time	$I_C = 1\text{A}; I_{B1} = I_{B2} = 2\text{mA},$ $R_L = 25\Omega$ $V_{BB2} = 4\text{V}$			2.0	μs
t_s	Storage time				12	μs
t_f	Fall time				5.0	μs

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PACKAGE OUTLINE

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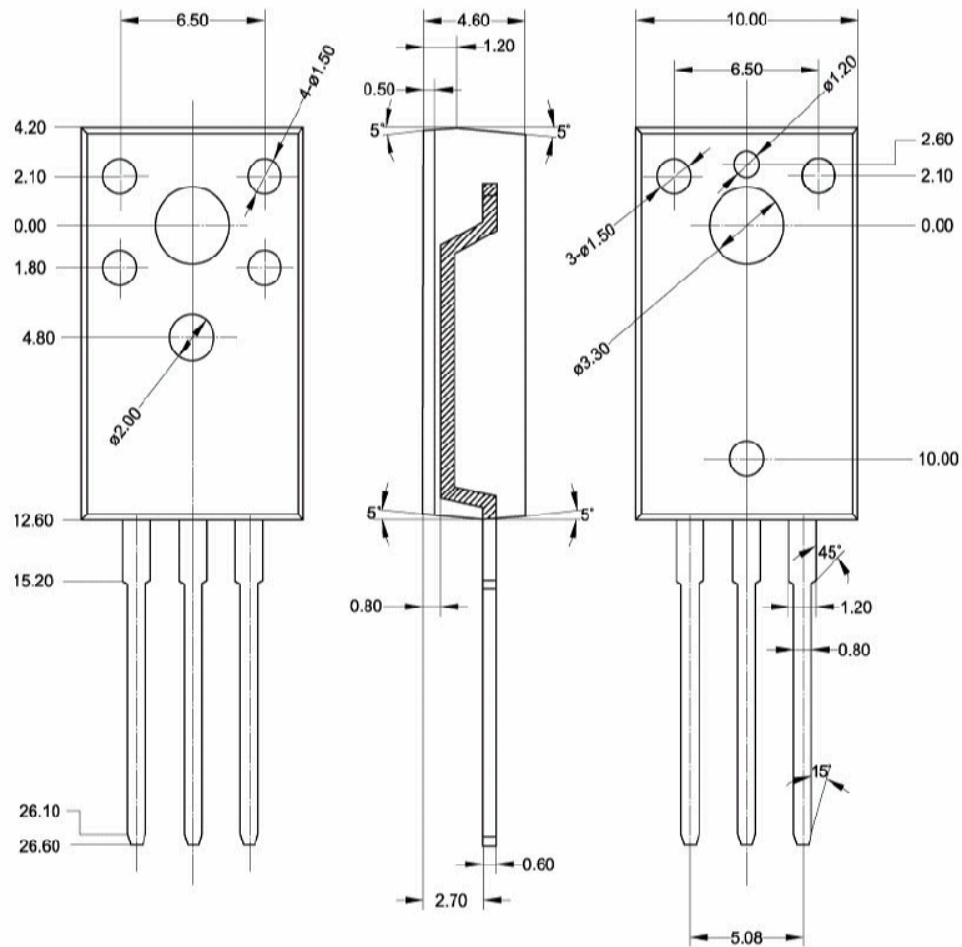


Fig.2 Outline dimensions (unindicated tolerance:±0.20 mm)