

Silicon NPN Power Transistors

2SD1788

DESCRIPTION

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

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

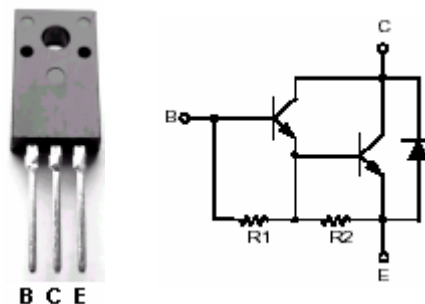


Fig.1 simplified outline (ITO-220) and symbol

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

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	100	V
V_{CEO}	Collector-emitter voltage	Open base	100	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	$I_C=1A; I_B=2mA$			1.5	V
V_{BEsat}	Base-emitter saturation voltage	$I_C=1A; I_B=2mA$			2.0	V
I_{CBO}	Collector cut-off current	$V_{CB}=100V; I_E=0$			0.1	mA
I_{CEO}	Collector cut-off current	$V_{CE}=100V; I_B=0$			0.1	mA
I_{EBO}	Emitter cut-off current	$V_{EB}=7V; I_C=0$			5	mA
h_{FE}	DC current gain	$I_C=1A; V_{CE}=3V$	1500		30000	
f_T	Transition frequency	$I_C=0.4A; V_{CE}=10V$		20		MHz

Switching times

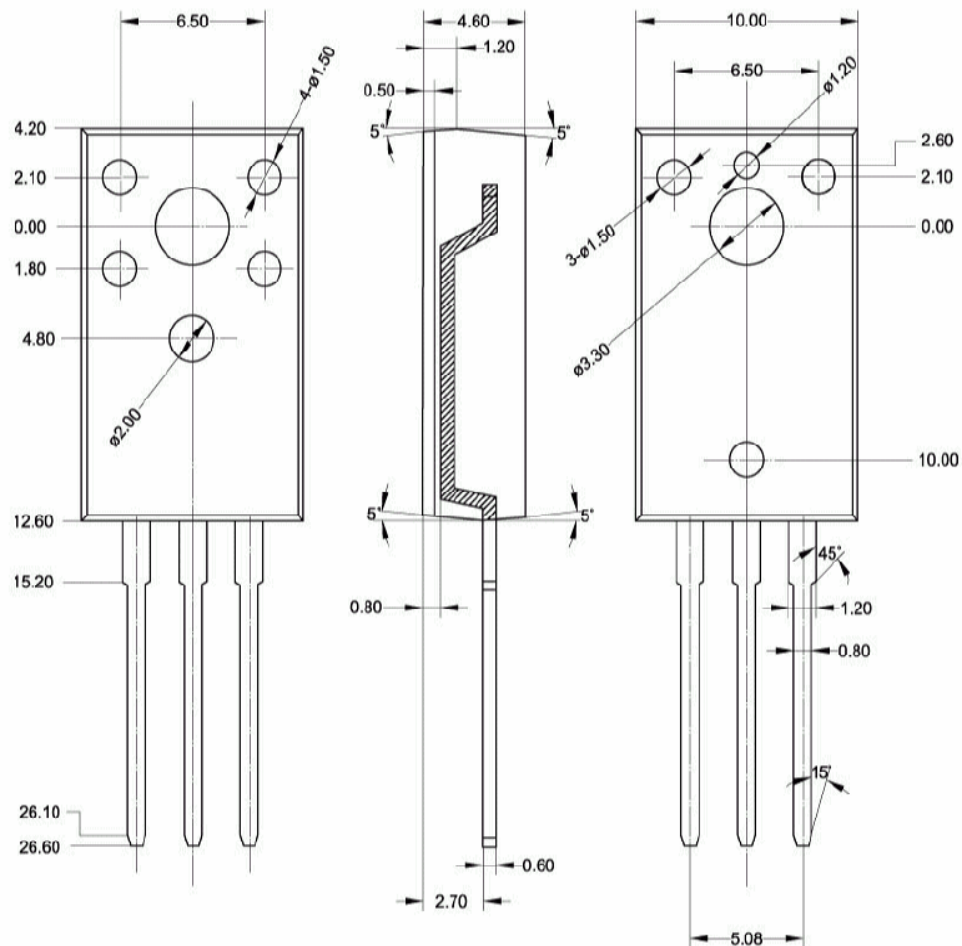
t_{on}	Turn-on time	$I_C=1A; I_{B1}=I_{B2}=2mA,$ $R_L=25\Omega; V_{BB2}=4V$			2.0	μs
t_s	Storage time				12	μs
t_f	Fall time				5.0	μs

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PACKAGE OUTLINE

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