

Silicon NPN Power Transistors

2SD1940

DESCRIPTION

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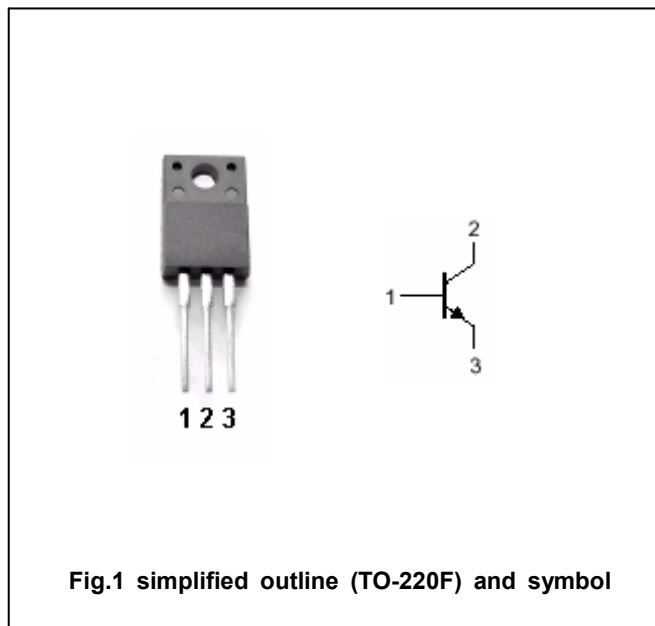
- With TO-220F package
- Wide area of safe operation

APPLICATIONS

- 85V/6A, AF 25 to 30W output applications

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

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

SYMBOL	PARAMETER	CONDITIONS	MAX	UNIT
V_{CBO}	Collector-base voltage	Open emitter	100	V
V_{CEO}	Collector-emitter voltage	Open base	85	V
V_{EBO}	Emitter-base voltage	Open collector	6	V
I_C	Collector current		6	A
I_{CM}	Collector current-peak		10	A
P_C	Collector dissipation	$T_C=25^\circ\text{C}$	25	W
T_j	Junction temperature		150	$^\circ\text{C}$
T_{stg}	Storage temperature		-55~150	$^\circ\text{C}$

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CHARACTERISTICS

Tj=25°C unless otherwise specified

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SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_C=5mA ; R_{BE}=\infty$	85			V
$V_{(BR)CBO}$	Collector-base breakdown voltage	$I_C=5mA ; I_E=0$	100			V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	$I_E=5mA ; I_C=0$	6			V
V_{CEsat}	Collector-emitter saturation voltage	$I_C=4A ; I_B=0.4A$			2.0	V
V_{BE}	Base-emitter on voltage	$I_C=1A ; V_{CE}=5V$			1.5	V
I_{CBO}	Collector cut-off current	$V_{CB}=40V ; I_E=0$			0.1	mA
I_{EBO}	Emitter cut-off current	$V_{EB}=4V ; I_C=0$			0.1	mA
h_{FE-1}	DC current gain	$I_C=1A ; V_{CE}=5V$	60		320	
h_{FE-2}	DC current gain	$I_C=3A ; V_{CE}=5V$	20			
f_T	Transition frequency	$I_C=1A ; V_{CE}=5V$		15		MHz
C_{OB}	Collector output capacitance	$f=1MHz ; V_{CB}=10V$		110		pF

Switching times

t_{on}	Turn-on time	$I_C=0.5A ; I_{B1}=-I_{B2}=50mA$ $V_{CC}=20V , R_L=40\Omega$		0.28		μs
t_s	Storage time			3.60		μs
t_f	Fall time			0.50		μs

◆ h_{FE-1} Classifications

D	E	F
60-120	100-200	160-320

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PACKAGE OUTLINE

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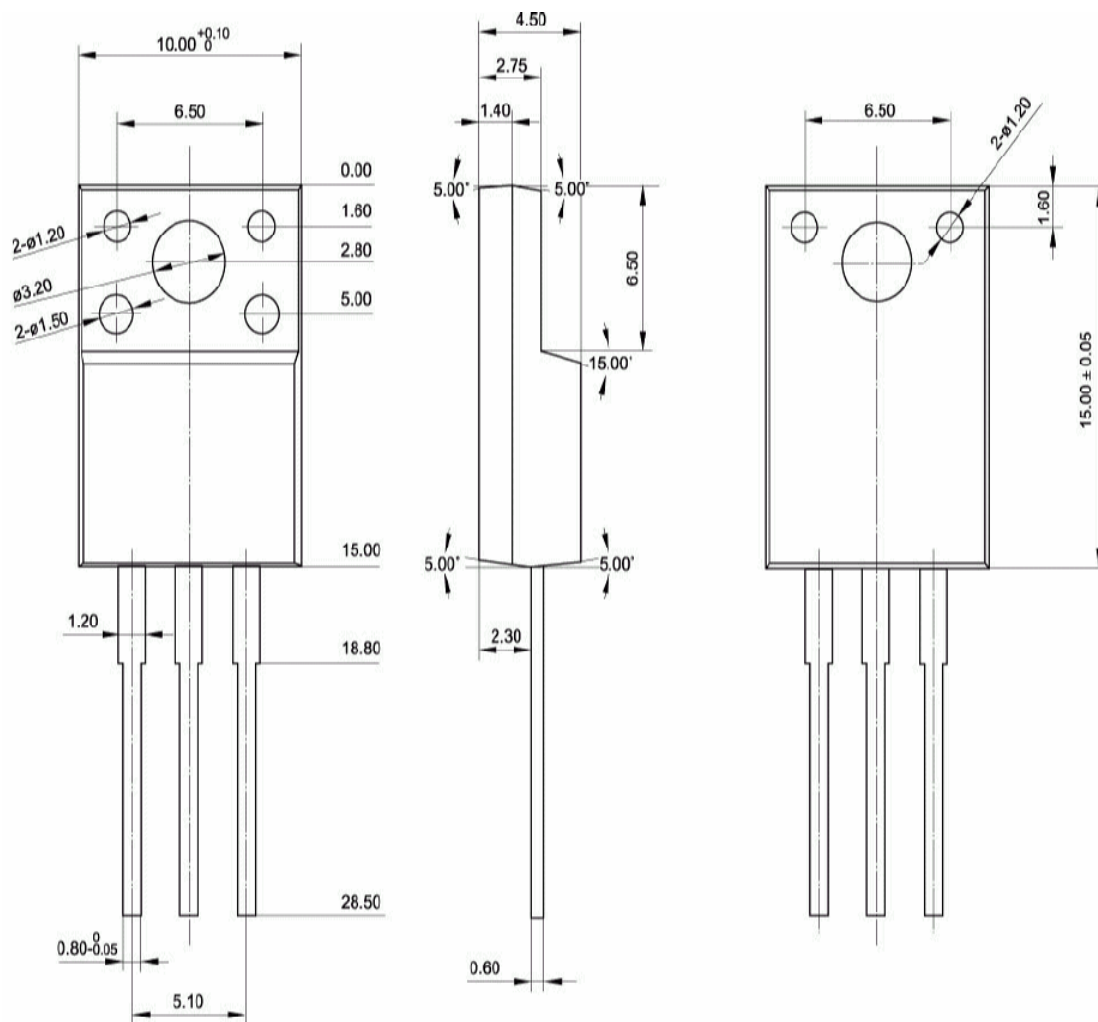


Fig.2 Outline dimensions

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