

Silicon NPN Power Transistors

2SC3092

DESCRIPTION

- With TO-3 package
- High breakdown voltage
- Fast switching speed.
- Wide area of safe operation

APPLICATIONS

- 500V/7A switching regulator applications

PINNING(see Fig.2)

PIN	DESCRIPTION
1	Base
2	Emitter
3	Collector



Fig.1 simplified outline (TO-3) and symbol

ABSOLUTE MAXIMUM RATINGS($T_C=25^\circ\text{C}$)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	800	V
V_{CEO}	Collector-emitter voltage	Open base	500	V
V_{EBO}	Emitter-base voltage	Open collector	7	V
I_C	Collector current		7	A
I_{CP}	Collector current-peak	$PW \leq 300\mu\text{s}$, Duty Cycle $\leq 10\%$	14	A
I_B	Base current		3	A
P_C	Collector power dissipation	$T_C=25^\circ\text{C}$	90	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℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_C=5mA$; $R_{BE}=\infty$	500			V
$V_{(BR)CBO}$	Collector-base breakdown voltage	$I_C=1mA$; $I_E=0$	800			V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	$I_E=1mA$; $I_C=0$	7			V
$V_{CE(sat)}$	Collector-emitter saturation voltage	$I_C=3A$; $I_B=0.6A$			1.0	V
$V_{BE(sat)}$	Base-emitter saturation voltage	$I_C=3A$; $I_B=0.6A$			1.5	V
I_{CBO}	Collector cut-off current	$V_{CB}=500V$; $I_E=0$			10	μA
I_{EBO}	Emitter cut-off current	$V_{EB}=5V$; $I_C=0$			10	μA
h_{FE-1}	DC current gain	$I_C=0.6A$; $V_{CE}=5V$	15		50	
h_{FE-2}	DC current gain	$I_C=3A$; $V_{CE}=5V$	8			
C_{OB}	Output capacitance	$I_E=0$; $V_{CB}=10V$, $f=1MHz$		80		pF
f_T	Transition frequency	$I_C=0.6A$; $V_{CE}=10V$		18		MHz

Switching times

t_{on}	Turn-on time	$I_C=4A$; $I_{B1}=0.8A$; $I_{B2}=-1.6A$ $V_{CC}=200V$, $R_L=50\Omega$			0.5	μs
t_s	Storage time				3.0	μs
t_f	Fall time				0.3	μs

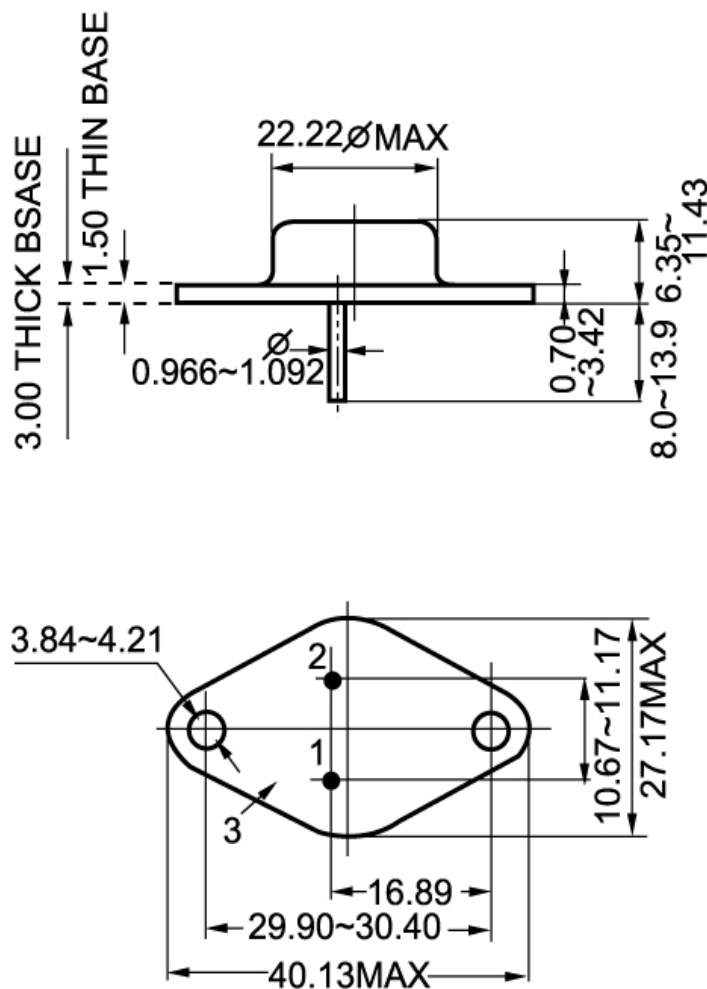
◆ h_{FE-1} classifications

L	M	N
15-30	20-40	30-50

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PACKAGE OUTLINE

Fig.2 outline dimensions (unindicated tolerance: $\pm 0.1\text{mm}$)