

Silicon NPN Power Transistors

2SD1415

DESCRIPTION

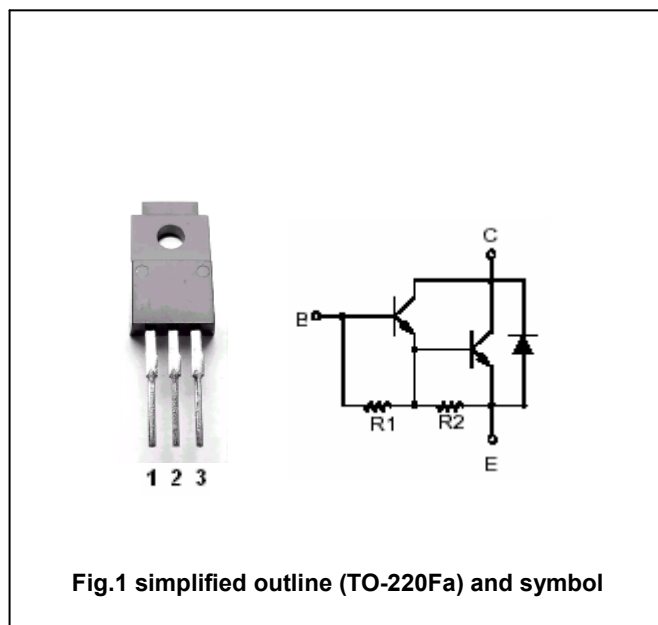
- With TO-220Fa package
- High DC current gain
- Low saturation voltage
- Complement to type 2SB1020
- DARLINGTON

APPLICATIONS

- High power switching applications
- Hammer drive,pulse motor drive 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	100	V
V_{CEO}	Collector -emitter voltage	Open base	100	V
V_{EBO}	Emitter-base voltage	Open collector	5	V
I_C	Collector current		7	A
I_B	Base current		0.2	A
P_C	Collector power dissipation	$T_C=25^\circ\text{C}$	30	W
T_j	Junction temperature		150	$^\circ\text{C}$
T_{stg}	Storage temperature		-55~150	$^\circ\text{C}$

Silicon NPN Power Transistors

2SD1415

CHARACTERISTICS

Tj=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_C=50mA$; $I_B=0$	100			V
$V_{CEsat-1}$	Collector-emitter saturation voltage	$I_C=3A$; $I_B=6mA$		0.9	1.5	V
$V_{CEsat-2}$	Collector-emitter saturation voltage	$I_C=7A$; $I_B=14mA$		1.2	2.0	V
V_{BEsat}	Base-emitter saturation voltage	$I_C=3A$; $I_B=6mA$		1.5	2.5	V
I_{CBO}	Collector cut-off current	$V_{CB}=100V$; $I_E=0$			100	μA
I_{EBO}	Emitter cut-off current	$V_{EB}=5V$; $I_C=0$			3.0	mA
h_{FE-1}	DC current gain	$I_C=3A$; $V_{CE}=3V$	2000		15000	
h_{FE-2}	DC current gain	$I_C=7A$; $V_{CE}=3V$	1000			

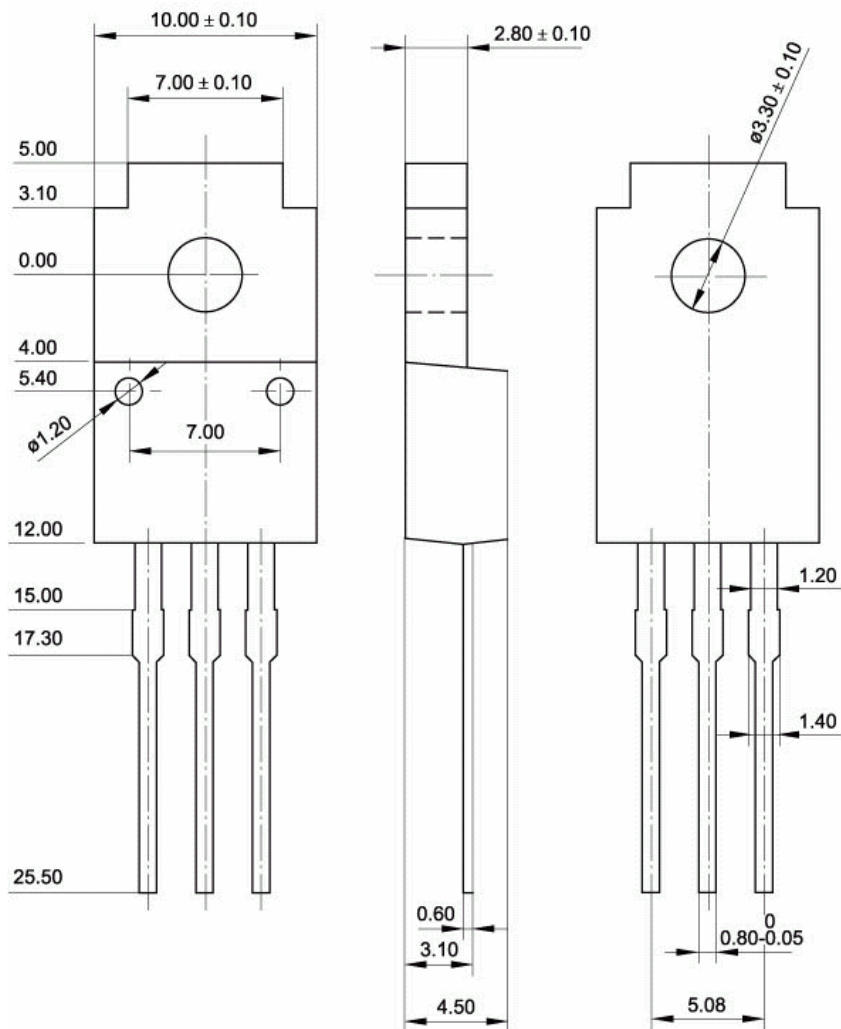
Switching times

t_{on}	Turn-on time	$I_{B1}=-I_{B2}=6mA$ $V_{CC}=45V$, $R_L=15\Omega$		0.8		μs
t_{stg}	Storage time			3.0		μs
t_f	Fall time			2.5		μs

Silicon NPN Power Transistors

2SD1415

PACKAGE OUTLINE

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