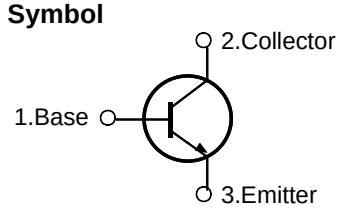
High Voltage Fast-Switching NPN Power Transistor

Features

- Very High Switching Speed
- Minimum Lot-to-Lot hFE Variation
- Short storge time
- Wide Reverse Bias S.O.A

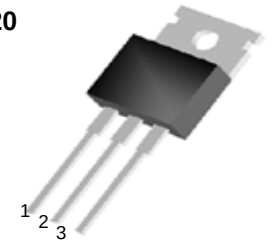
Symbol



General Description

This devices is designed for high voltage, high speed switching characteristic,especially suitable for ballast sysytem.

TO-220



Absolute Maximum Ratings

Symbol	Parameter	Value	Units
V_{CES}	Collector-Emitter Voltage (V_{BE} = 0)	700	V
V_{CEO}	Collector-Emitter Voltage (I_B = 0)	400	V
V_{EBO}	Emitter-Base Voltage (I_C = 0)	9.0	V
I_C	Collector Current	1.5	A
I_{CM}	Collector Peak Current (t_P < 5 ms)	3	A
I_B	Base Current	0.75	A
P_C	Total Dissipation at T_C = 25 °C	20	W
T_{STG}	Storage Temperature	- 65 ~ 150	°C
T_J	Max. Operating Junction Temperature	150	°C

Thermal Characteristics

Symbol	Parameter	Value	Units
$R_{\theta JC}$	Thermal Resistance, Junction-to-Case	1.56	°C/W
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	62.5	°C/W

Electrical Characteristics (T_C = 25 °C unless otherwise noted)

Symbol	Parameter	Condition	Min	Typ	Max	Units
I_{CEV}	Collector Cut-off Current (V_{BE} = - 1.5V)	V_{CE} = 700V V_{CE} = 700V T_C = 100 °C	-	-	1.0 5.0	mA
$V_{CEO(sus)}$	Collector-Emitter Sustaining Voltage (I_B = 0)	I_C = 10 mA	400	-	-	V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C = 0.5A I_B = 0.1A I_C = 1.0A I_B = 0.25A I_C = 1.5A I_B = 1.0A I T_C = 100 °C	-	-	0.5 1.0 3.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C = 0.5A I_B = 0.1A I_C = 1.0A I_B = 0.25A T_C = 100 °C	-	-	1.0 1.2	V
h_{FE}	DC Current Gain	I_C = 0.5A V_{CE} = 2V I_C = 1.0A V_{CE} = 2V	10 5	-	40 40	
t_s t_f	Storage Time Fall Time	V_{CC} = 5V I_C = 0.5A	-	2	4 0.8	μS

※ Notes :

Pulse Test : Pulse width $\leq$ 300μS, Duty cycle $\leq$ 2%

Fig 1. Safe operation area

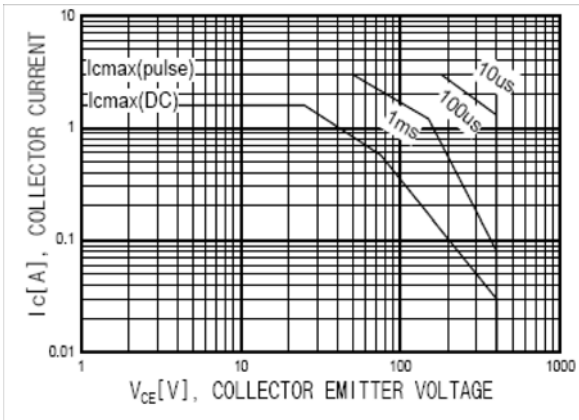


Fig 2. DC Current Gain

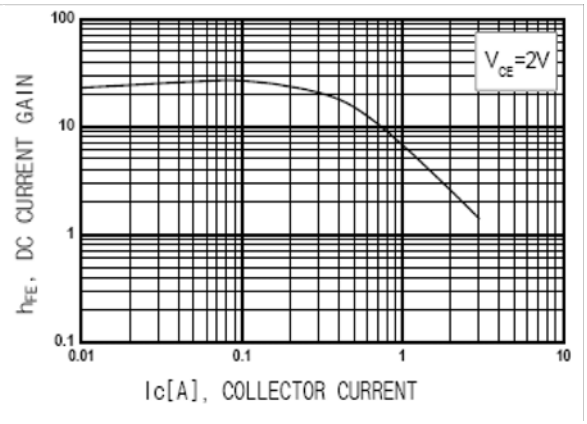


Fig 3. Power derating

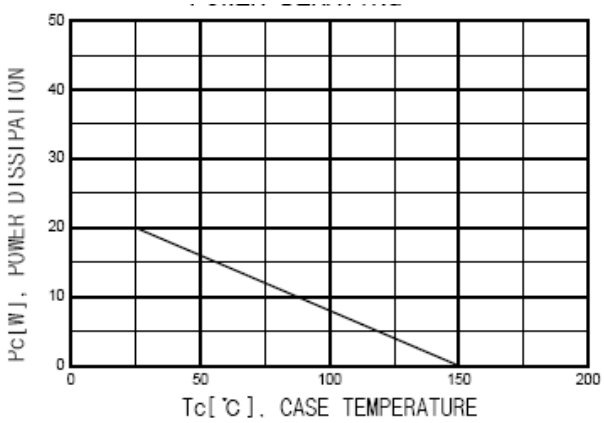
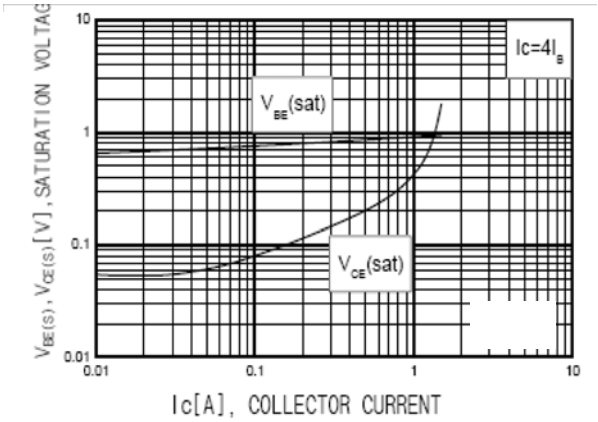


Fig 4. Saturation Voltage



TO-220 Package Dimension

Dim.	mm			Inch		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.7		10.1	0.382		0.398
B	6.3		6.7	0.248		0.264
C	9.0		9.47	0.354		0.373
D	12.8		13.3	0.504		0.524
E	1.2		1.4	0.047		0.055
F		1.7			0.067	
G		2.5			0.098	
H	3.0		3.4	0.118		0.134
I	1.25		1.4	0.049		0.055
J	2.4		2.7	0.094		0.106
K	5.0		5.15	0.197		0.203
L	2.2		2.6	0.087		0.102
M	1.42		1.62	0.056		0.064
N	0.45		0.6	0.018		0.024
O	1.17		1.37	0.046		0.054
ϕ		3.6			0.142