Bipolar Transistor

multicomp PRO

RoHS Compliant

Description:

This NPN transistor in a TO–3 package is designed for high voltage switching applications.

Applications:

- Off Line Power Supplies
- Converter Circuits
- Pulse Width Modulated Regulators Specification Feature:
- High Voltage Capability
- Fast Switching Speeds
- Low Saturation Voltage

Absolute maximum Ratings:

Collector-Emitter Voltage, V_{CEO}	: 400V
Collector-Emitter Voltage, V_{CEX}	: 450V
Collector-Emitter Voltage, V_{CEV}	: 650V
Emitter-Base Voltage, V_{EB}	: 8V
Collector Current, Continuous I_C	: 15A
Base Current Peak, I_{CM}	: 20A
Total Device Dissipation (T_C = +25°C), P_D	: 175W
Derate Above 25°C	: 1.0W/°C
Operating Junction Temperature Range, T_J	: -65°C to +200°C
Storage Temperature Range, T_{stg}	: -65°C to +200°C
Thermal Resistance, Junction-to-Case, R_{thJC}	: 1.0°C/W
Maximum Lead Temperature (During Soldering, 1/8" from case, 5sec), T_L	: +275°C

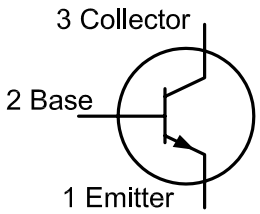
Electrical Characteristics: (T_A = +25°C Unless otherwise specified)

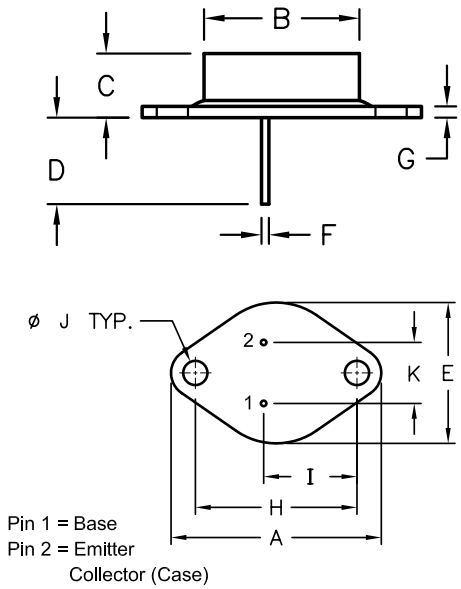
Parameter	Symbol	Test Conditions	Min	Max	Unit
OFF Characteristics					
Collector-Emitter Sustaining Voltage	$V_{CEO\ (SUS)}$	I_C = 200mA, I_B = 0	400	-	V
Collector Cut-off Current	I_{CEV}	V_{CE} = 650V, $V_{EB(OFF)}$ = -1.5V	-	0.1	mA
		V_{CE} = 650V, $V_{EB\ (OFF)}$ = 1.5V, T_C = +100°C	-	1.0	
Emitter Cut-off Current	I_{EBO}	V_{EB} = 8V, I_C = 0	-	2.0	
ON Characteristics (Note 1)					
DC Current Gain	h_{FE}	I_C = 15A, V_{CE} = 3V	8	-	-
Collector-Emitter Saturation Voltage	V_{CE}(sat)	I_C = 15A, I_B = 3A	-	1.5	V
Base-Emitter Saturation Voltage	V_{BE}(sat)	I_C = 15A, V_{CE} = 3A		1.5	
Dynamic Characteristics					
Current Gain-Bandwidth Product	f_T	V_{CE} = 20V, I_C = 20mA, f = 100MHz	3	-	MHz
Output Capacitance	C_{ob}	V_{CB} = 10V, I_E = 0, f = 1MHz	-	500	pF

Switching Characteristics

Delay Time	t_d	V_{CC} = 200V, I_C = 15A, I_{B1} = I_{B2} = 3A Duty Cycle ≦ 2% V_{BB} = 6V, R_L = 13.5Ω	-	0.2	µs
Rise Time	t_r		-	0.6	
Storage Time	t_s		-	2.5	
Fall Time	t_f		-	0.6	

Notes: 1. Pulse Test: Pulse Width 300µs, Duty Cycle ≦ 2%.





Dim	Min	Max
A	38.75	39.96
B	19.28	22.23
C	7.96	9.28
D	11.18	12.19
E	25.2	26.67
F	0.92	1.09
G	1.38	1.62
H	29.9	30.4
I	16.64	17.3
J	3.88	4.36
K	10.67	11.18

Dimensions : Millimetres

Part Number Table

Description	Part Number
Transistor, Bipolar, Metal, TO-3, NPN	2N6678

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