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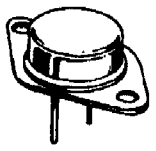
HIGH POWER NPN SILICON POWER TRANSISTORS

High-Current, High-Speed,High-Power Type for Switching and Amplifier Applications.

NPN
2N5671
2N5672

30 AMPERE
SILICON POWER
TRANSISTORS
90-120 VOLTS
140 WATTS

FEATURES:
* DC Current Gain hFE = 20 ~ 100 @ I_C = 15 A ,V_{CE}=2.0 V
* Low $V_{CE(SAT)}$ ≦ 0.75 V @ I_C=15A, I_B=1.2A
*Maximum Safe-Area-of-Operation Curves...
$I_{S/b}$ limit line beginning 24 V



TO-3

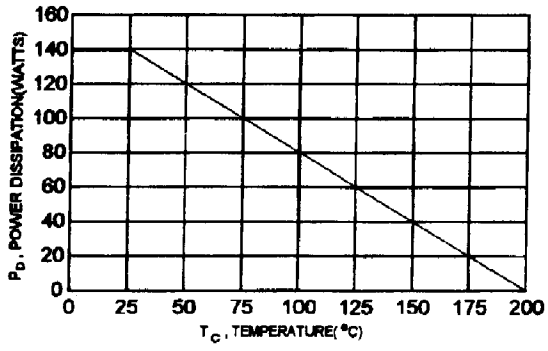
MAXIMUM RATINGS

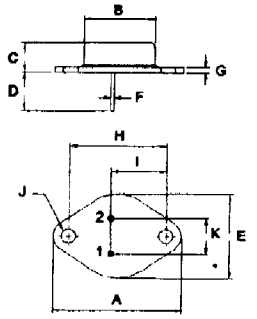
Characteristic	Symbol	2N5671	2N5672	Unit
Collector-Emitter Voltage	V_{CEO}	90	120	V
Collector-Base Voltage	V_{CBO}	120	150	V
Emitter-Base Voltage	V_{EBO}	7.0		V
Collector Current-Continuous	I_C	30		A
Base Current	I_B	10		A
Total Power Dissipation@T_C=25°C Derate above 25°C	P_D	140 0.8		W W/°C
Operating and Storage Junction Temperature Range	T_J,T_{STG}	- 65 to +200		°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance Junction to Case	Rθjc	1.25	°C/W

FIGURE -1 POWER DERATING





PIN 1.BASE
2.EMITTER
COLLECTOR(CASE)

DIM	MILLIMETERS	
	MIN	MAX
A	38.75	39.96
B	19.28	22.23
C	7.96	9.28
D	11.18	12.19
E	25.20	26.67
F	0.92	1.09
G	1.38	1.62
H	29.90	30.40
I	16.64	17.30
J	3.88	4.36
K	10.67	11.18

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector - Emitter Sustaining Voltage (1) (I_C = 200 mA, I_B = 0)	2N5671 2N5672	$V_{CEO(SUS)}$	 90 120		V
Collector Cutoff Current (V_{CE} = 80 V, I_B = 0) (V_{CE} = 80 V, I_B = 0)	 2N5671 2N5672	I_{CEO}		 10 10	mA
Collector Cutoff Current (V_{CE}=110 V, $V_{BE(off)}$ = 1.5 V) (V_{CE}=135 V, $V_{BE(off)}$ = 1.5 V) (V_{CE}=100 V, $V_{BE(off)}$ = 1.5 V, T_C = 150°C)	 2N5671 2N5672 2N5671 2N5672	I_{CEV}		 12 10 15 10	mA
Emitter Cutoff Current (V_{EB} = 7.0 V , I_C = 0)		I_{EBO}		 10	mA
ON CHARACTERISTICS (1)					
DC Current Gain (I_C = 15.0 A , V_{CE} = 2.0 V) (I_C = 20.0 A , V_{CE} = 5.0 V)		hFE	 20 20	 100	
Collector - Emitter Saturation Voltage (I_C = 15.0 A , I_B = 1.2 A)		$V_{CE(sat)}$		 0.75	V
Base - Emitter Saturation Voltage (I_C = 15.0 A , I_B = 1.2 A)		$V_{BE(sat)}$		 1.5	V
Base - Emitter On Voltage (I_C = 15.0 A, V_{CE} = 5.0 V)		$V_{BE(on)}$		 1.6	V
DYNAMIC CHARACTERISTICS					
Current - Gain - Bandwidth Product (2) (I_C = 2.0 A , V_{CE} = 10.0 V , f = 1.0 MHz)		f_T	 40		MHz

SWITCHING CHARACTERISTICS

On Time	V_{CC} = 30 V I_C = 15.0 A I_{B1} = -I_{B2} = 1.2 A t_p = 0.1 ms Duty Cycle ≤2.0%	t_{on}		0.5	us
Storage Time		t_s		1.5	us
Fall Time		t_f		0.5	us

(1) Pulse Test: Pulse width = 300 us , Duty Cycle ≤ 2.0%

(2) $f_T = |h_{fe}| \cdot f_{test}$