MOSPEC

COMPLEMENTARY SILICON POWER TRANSISTORS

The 2N3773 and 2N6609 are power base power transistors designed for high power audio, disk head positioners,linear amplifiers,switching regulators,solenoid drivers,and dc to dc converters or inverters.

NPN 2N3773 **PNP 2N6609**

16 AMPERE
COMPLEMENTARY SILICON
POWER TRANSISTORS
140 VOLTS
150 WATTS

FEATURES:

* High Power Dissipation
  P_D = 150 W (T_C = 25°C)
* High DC Current Gain and Low Saturation Voltage
  hFE = 15-60 @ I_C = 8 A , V_{CE} = 4 V
  $V_{CE(SAT)}$ = 1.4 V (Max.) @ I_C = 8 A, I_B = 0.8 A

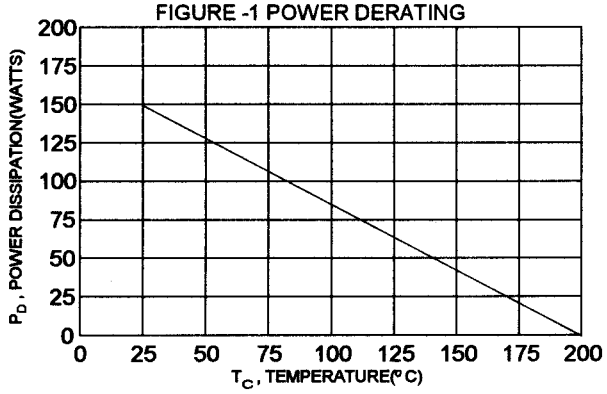
MAXIMUM RATINGS

Characteristic	Symbol	Rating	Unit
Collector-Emitter Voltage	$V_{CEO(SUS)}$	140	V
Collector-Emitter Voltage	V_{CEX}	160	V
Collector-Base Voltage	V_{CBO}	160	V
Emitter-Base Voltage	V_{EBO}	7	V
Collector Current-Continuous Peak (1)	I_C I_{CM}	16 30	A
Base Current-Continuous Peak (1)	I_B I_{BM}	4.0 15	A
Total Power Dissipation @T_C=25°C Derate above 25°C	P_D	150 0.857	W W/°C
Operating and Storage Junction Temperature Range	T_J , T_{STG}	-65 to +200	°C

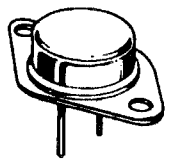
THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance Junction to Case	Rθjc	1.17	°C/W

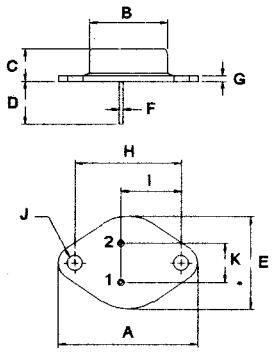
FIGURE -1 POWER DERATING



(1) Pulse Test: Pulse width = 5 ms , Duty Cycle < 10%



TO-3



PIN 1.BASE
2.EMITTER
COLLECTOR(CASE)

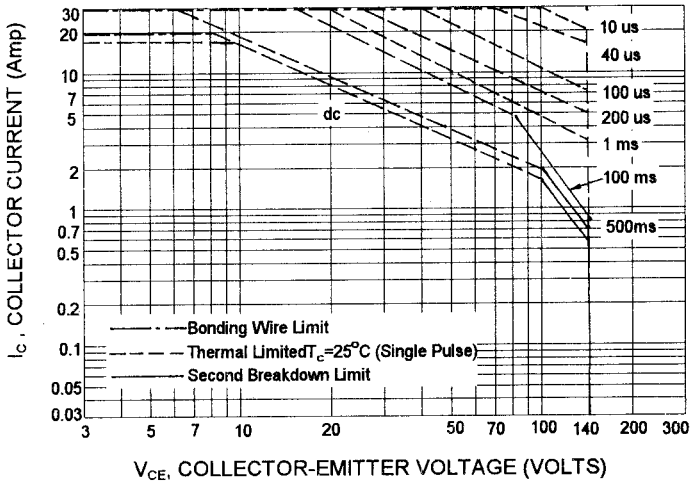
DIM	MILLIMETERS	
	MIN	MAX
A	38.75	39.96
B	19.28	22.23
C	7.96	9.28
D	11.18	12.19
E	25.20	26.67
F	0.92	1.09
G	1.38	1.62
H	29.90	30.40
I	16.64	17.30
J	3.88	4.36
K	10.67	11.18

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)	$V_{CEO(SUS)}$	140		V
Collector Cutoff Current (V_{CE} = 120 V, I_B = 0)	I_{CEO}		10	mA
Collector Cutoff Current (V_{CE} = 140 V, $V_{BE(OFF)}$ = 1.5 V)	I_{CEX}		2.0	mA
Collector Cutoff Current (V_{CB} = 140 V, I_E = 0)	I_{CBO}		2.0	mA
Emitter Cutoff Current (V_{EB} = 7.0 V, I_C = 0)	I_{EBO}		5.0	mA
ON CHARACTERISTICS (1)				
DC Current Gain (I_C = 8.0 A , V_{CE} = 4.0 V) (I_C = 16 A, V_{CE} = 4.0 V	hFE	15 5.0	60	
Collector - Emitter Saturation Voltage (I_C = 8.0 A , I_B = 800 mA) (I_C = 16 A, I_B = 3.2 A)	$V_{CE(sat)}$		1.4 4.0	V
Base - Emitter On Voltage (I_C = 8.0 A, V_{CE} = 4.0 V)	$V_{BE(ON)}$		2.2	V

* Pulse Test: Pulse width = 300 us , Duty Cycle = 2.0%

ACTIVE-REGION SAFE OPERATING AREA (SOA)

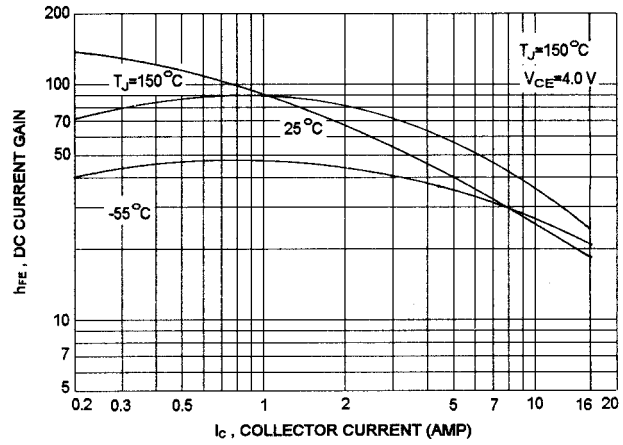


There are two limitation on the power handling ability of a transistor:average junction temperature and second breakdown safe operating area curves indicate I_C-V_{CE} limits of the transistor that must be observed for reliable operation i.e., the transistor must not be subjected to greater dissipation than curves indicate.

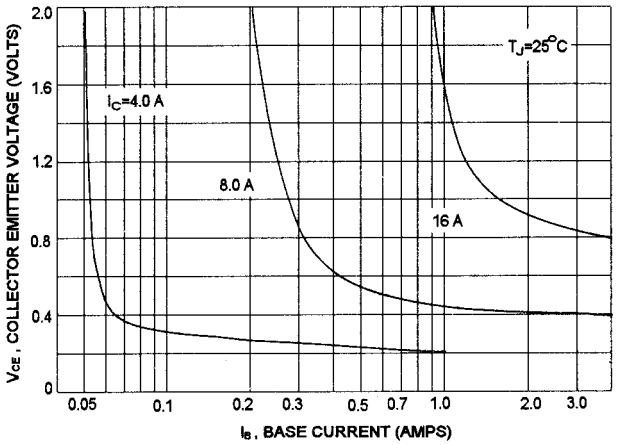
The data of SOA curve is base on $T_{J(PK)}$=200 °C;T_C is variable depending on conditions. second breakdown pulse limits are valid for duty cycles to 10% provided $T_{J(PK)}$≤200°C,At high case temperatures, thermal limita - tion will reduce the power that can be handled to values less than the limitations imposed by second breakdown.

NPN 2N3773

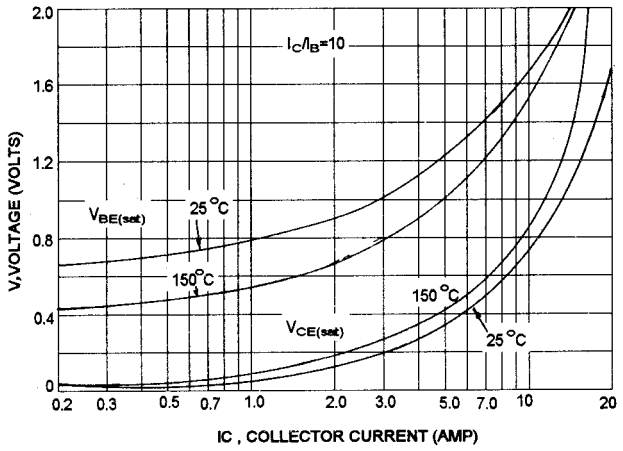
DC CURRENT GAIN



COLLECTOR SATURATION REGION

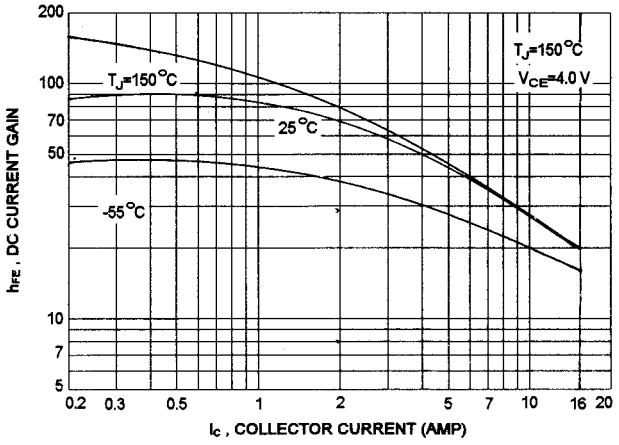


"ON" VOLTAGES

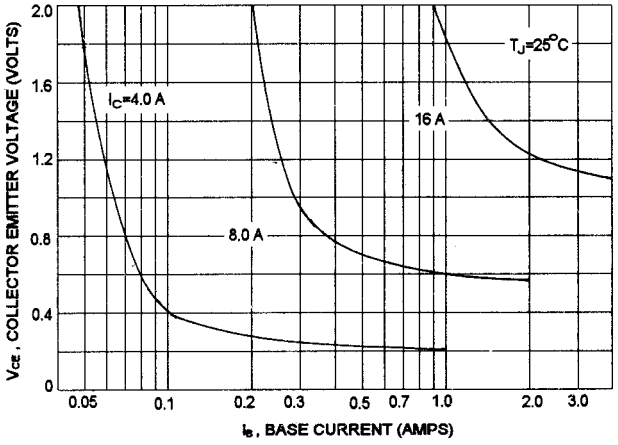


PNP MJ6609

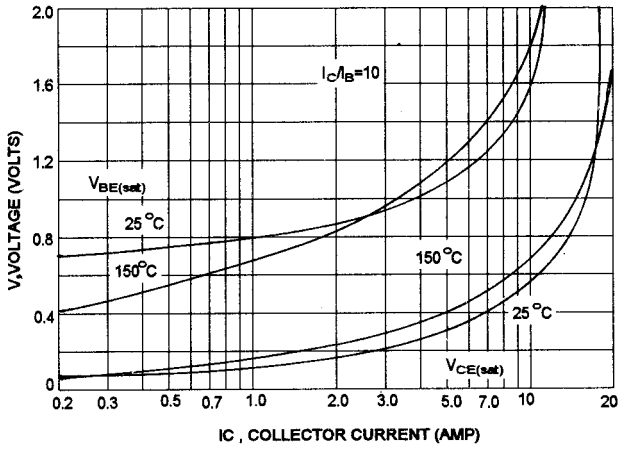
DC CURRENT GAIN



COLLECTOR SATURATION REGION



"ON" VOLTAGES



Notice

MOSPEC reserves the rights to make changes of the content herein the document anytime without notification. MOSPEC or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies. Please refer to MOSPEC website for the last document.

MOSPEC disclaims any and all liability arising out of the application or use of any product including damages incidentally and consequentially incurred.

Application shown on the herein document are examples of standard use and operation. Customers are responsible for comprehending suitable use in particular applications. MOSPEC makes no representation or warranty that such application will be suitable for the specified use without further testing or modification.

The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by MOSPEC for any infringements of patents or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of MOSPEC or others.

These MOSPEC products are intended for usage in general electronic equipment. Please make sure to consult with MOSPEC before you use these MOSPEC products in equipment which require specialized quality and/or reliability, and in equipment which could have major impact to the welfare of human life (atomic energy control, aeronautics , traffic control, combustion control, safety devices etc.)