



## HIGH POWER TRANSISTOR

NPN 2N3773

16A 150W

### Technical Data

...designed for high power audio and linear applications. These devices can also be used in power switching circuits such as relay or solenoid drivers, dc to dc converters or inverters.

- ☞ DC Current Gain -  $h_{FE} = 15 - 60 @ I_C = 8A_{dc}, V_{CE}=4V$
- ☞ Collector – Emitter Saturation Voltage  $-V_{CE(SAT)} = 1.1V @ I_C = 8A, I_B=0.8A$
- ☞ Excellent Safe Operating Area: 150 W @ 100V
- ☞ TO-3 Package

### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector- Emitter Voltage	$V_{CEO}$	140	Vdc
Collector- Emitter Voltage	$V_{CER}$	150	Vdc
Collector – Base Voltage	$V_{CB}$	160	Vdc
Emitter Base Voltage	$V_{EB}$	7	Vdc
Collector Current – Continuous	$I_C$	16	Adc
---Peak(1)		30	
Base Current – Continuous	$I_B$	4	Adc
---Peak(1)		15	
Total Power Dissipation @ $T_C = 25^\circ C$	PD	150	Watts
Derate above $25^\circ C$		0.855	$W/^\circ C$
Operating and Storage junction Temperature Range	$T_j, T_{stg}$	-65 to +200	$^\circ C$

### THERMAL CHARACTERISTICS

Characteristic	Symbol	Max.	Unit
Thermal resistance junction to case	$R_{thjc}$	1.17	$^\circ C/W$



**ELECTRICAL CHARACTERISTICS : [ Tc = 25 °C unless otherwise noted ]**

Characteristic	Symbol	Min	Typ	Max	Unit
<b>* OFF CHARACTERISTICS :</b>					
Collector–Emitter Sustaining Voltage (1) [ Ic =200 mAdc, I <sub>B</sub> = 0 ]	V <sub>CEO(sus)</sub>	140			Vdc
Collector–Emitter Sustaining Voltage (1) [ Ic =200 mAdc, R <sub>BE</sub> = 100 Ohms ]	V <sub>CER(sus)</sub>	150			Vdc
Collector–Emitter Sustaining Voltage (1) [ Ic =100 mAdc, V <sub>BE(off)</sub> =1.5Vdc,R <sub>BE</sub> =100 Ohms ]	V <sub>CEx(sus)</sub>	160			Vdc
Collector Cutoff Current [ V <sub>CE</sub> =120 Vdc, I <sub>B</sub> = 0 ]	I <sub>CEO</sub>			10	mAdc
Collector Cutoff Current [ V <sub>CE</sub> =140 Vdc, V <sub>BE(off)</sub> =1.5Vdc ]	I <sub>CEX</sub>			2	mAdc
Collector Cutoff Current [ V <sub>CB</sub> = 140 Vdc, I <sub>E</sub> =0 ]	I <sub>CBO</sub>			2	mAdc
Emitter Cutoff Current [ V <sub>EB</sub> = 7.0 Vdc , Ic = 0 ]	I <sub>EBO</sub>			5.0	mAdc
<b>* ON CHARACTERISTICS (1):</b>					
DC Current Gain [ Ic = 16.0 Adc , V <sub>CE</sub> = 4.0 Vdc ] [ Ic = 8Adc , V <sub>CE</sub> = 4.0 Vdc ]	h <sub>FE</sub>	5 15		60	
Collector-Emitter Saturation Voltage [ Ic = 8.0 Adc , I <sub>B</sub> =800 mAdc ] [ Ic = 16 Adc , I <sub>B</sub> = 3.2 Adc ]	V <sub>CE(sat)</sub>			1.4 4.0	Vdc
Base-Emitter on Voltage [ Ic = 8.0 Adc , V <sub>CE</sub> = 4.0. V <sub>DC</sub> ]	V <sub>BE(on)</sub>			2.2	Vdc
<b>SECOND BREAKDOWN</b>					
Second Breakdown Collector current With Base Forward Biased [V <sub>CE</sub> =100 Vdc, t = 1.0 s Nonrepetitive]	I <sub>s/b</sub>	1.5			Adc
<b>DYNAMIC CHARACTERISTICS :</b>					
Small Signal Current Gain [ I <sub>C</sub> = 1.0 Adc, V <sub>CE</sub> =4.0 Vdc, f=1.0kHz]	h <sub>fe</sub>	40			

- Indicates within JEDEC Registration.
- (1) Pulse Test : Pulse Width <300μs , Duty Cycle < 2.0%