

HIGH POWER TRANSISTOR

NPN 2N3055

15A 115W

Technical Data

...designed for general-purpose switching and amplifier application.

- ☞ DC Current Gain - $h_{FE} = 20 - 70 @ I_C = 4A_{dc}$
- ☞ Collector-Emitter Saturation Voltage - $V_{CE(sat)} = 1.1 V_{dc} (Max) @ I_C = 4A_{dc}$
- ☞ Excellent Safe Operating Area
- ☞ TO-3 Package

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector- Emitter Voltage	V_{CEO}	60	Vdc
Collector- Emitter Voltage	V_{CER}	70	Vdc
Collector – Base Voltage	V_{CB}	100	Vdc
Emitter Base Voltage	V_{EB}	7	Vdc
Collector Current – Continuos	I_C	15	Adc
Base Current – Continuos	I_B	7	Adc
Total Power Dissipation @ TC = 25°C Derate above 25°C	PD	115 0.657	Watts 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	R_{thjc}	1.52	°C/W



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

Characteristic	Symbol	Min	Typ	Max	Unit
* OFF CHARACTERISTICS :					
Collector–Emitter Sustaining Voltage (1) [Ic =200 mAdc, IB = 0]	V _{CEO(sus)}	60			Vdc
Collector–Emitter Sustaining Voltage (1) [Ic =200 mAdc, R _{BE} = 100 Ohms]	V _{CER(sus)}	70			Vdc
Collector Cutoff Current [V _{CE} = 30 Vdc, IB = 0]	I _{CEO}			0.70	mAdc
Collector Cutoff Current [V _{CE} = 100 Vdc, V _{BE(off)} = 1.5 Vdc] [V _{CE} = 100 Vdc, V _{BE(off)} = 1.5 Vdc , Tc = 150 °C]	I _{CEX}			1.0 5.0	mAdc
Emitter-Base Cutoff Current [V _{BE} = 7.0 Vdc , Ic = 0]	I _{EBO}			5.0	mAdc
* ON CHARACTERISTICS (1):					
DC Current Gain [Ic = 4.0 Adc , V _{CE} = 4.0 Vdc] [Ic = 10 Adc , V _{CE} = 4.0 Vdc]	h _{FE}	20 5.0		70	
Collector-Emitter Saturation Voltage [Ic = 4.0 Adc , IB = 400 mAdc] [Ic = 10 Adc , IB = 3.3 Adc]	V _{CE(sat)}			1.1 3.0	Vdc
Base-Emitter on Voltage [Ic = 4.0 Adc , V _{CE} = 4.0. V _{DC}]	V _{BE(on)}			1.5	Vdc
SECOND BREAKDOWN					
Second Breakdown Collector current With Base Forward Biased [VCE=40 Vdc, t = 1.0 s Nonrepetitive]	1s/b	2.87			Adc
DYNAMIC CHARACTERISTICS :					
Current Gain – Bandwidth Product [Ic = 0.5Adc , V _{CE} =10 Vdc , f=1.0 MHz]	f _T	2.5			MHz
Small Signal Current Gain [IC= 1.0 Adc, V _{CE} =4.0 Vdc, f=1.0kHz]	hfe	15		120	-
Small Signal Current Gain Cutoff Frequency [V _{CB} = 4.0 Vdc , Ic = 1.0 Adc, f = 1.0 KHz]	fhfe	10		-	kHz

- Indicates within JEDEC Registration. (2N3055)
- (1) Pulse Test : Pulse Width <300µs , Duty Cycle < 2.0%