



PRODUCT NAME : 2N6052 PNP Power Darlington Transistor

PRICE : Rs 20.00

SKU : RM2104



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DESCRIPTION

Features

- Collector-Emitter Volt (V_{ce0}): 100V
- Collector-Base Volt (V_{cbo}): 100V
- Collector Current (I_c): 12.0A
- h_{fe} : 750-18,000 @ 6.0A
- Power Dissipation (P_{tot}): 150W
- Type: PNP

MOTOROLA
SEMICONDUCTOR TECHNICAL DATA

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**Darlington Complementary
 Silicon Power Transistors**

... designed for general-purpose amplifier and low frequency switching applications.

- High DC Current Gain —
 $h_{FE} = 3500$ (Typ) @ $I_C = 5.0$ Adc
- Collector-Emitter Sustaining Voltage — @ 100 mA
 $V_{CEO(sus)} = 80$ Vdc (Min) — 2N6058
 100 Vdc (Min) — 2N6052, 2N6059
- Monolithic Construction with Built-In Base-Emitter Shunt Resistors

MAXIMUM RATINGS (1)

Rating	Symbol	2N6058	2N6052 2N6059	Unit
Collector-Emitter Voltage	V_{CEO}	80	100	Vdc
Collector-Base Voltage	V_{CB}	80	100	Vdc
Emitter-Base voltage	V_{EB}	5.0		Vdc
Collector Current — Continuous Peak	I_C	12 20		Adc
Base Current	I_B	0.2		Adc
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	150 0.857		Watts W/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200 $^\circ\text{C}$		$^\circ\text{C}$

THERMAL CHARACTERISTICS

Characteristic	Symbol	Rating	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.17	$^\circ\text{C/W}$

(1) Indicates JEDEC Registered Data.

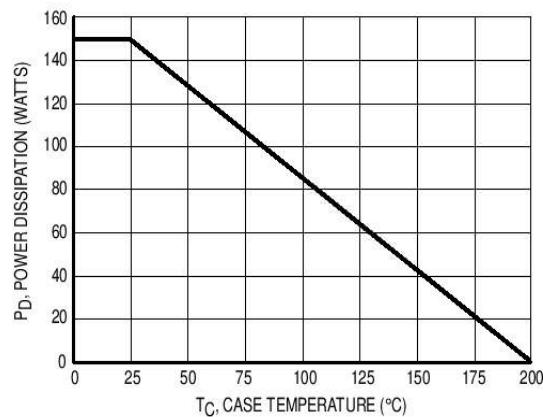


Figure 1. Power Derating

Preferred devices are Motorola recommended choices for future use and best overall value.



**PNP
 2N6052***

**NPN
 2N6058
 2N6059***

*Motorola Preferred Device

**DARLINGTON
 12 AMPERE
 COMPLEMENTARY
 SILICON
 POWER TRANSISTORS
 80-100 VOLTS
 150 WATTS**

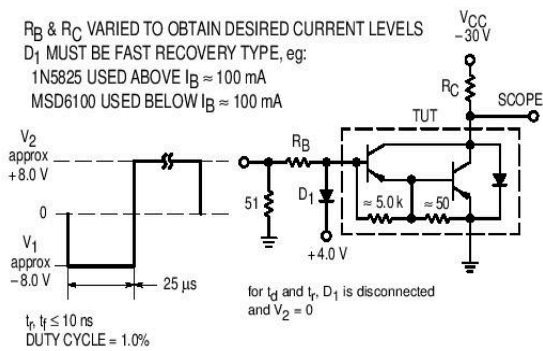
**CASE 1-07
 TO-204AA
 (TO-3)**

2N6052

*ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Sustaining Voltage (1) ($I_C = 100\text{ mA}$, $I_B = 0$)	$V_{CE(sus)}$	80 100	— —	Vdc
Collector Cutoff Current ($V_{CE} = 40\text{ Vdc}$, $I_B = 0$) ($V_{CE} = 50\text{ Vdc}$, $I_B = 0$)	I_{CEO}	— —	1.0 1.0	mAdc
Collector Cutoff Current ($V_{CE} = \text{Rated } V_{CEO}$, $V_{BE(off)} = 1.5\text{ Vdc}$) ($V_{CE} = \text{Rated } V_{CEO}$, $V_{BE(off)} = 1.5\text{ Vdc}$, $T_C = 150^\circ\text{C}$)	I_{CEX}	—	0.5 5.0	mAdc
Emitter Cutoff Current ($V_{BE} = 5.0\text{ Vdc}$, $I_C = 0$)	I_{EBO}	—	2.0	mAdc
ON CHARACTERISTICS (1)				
DC Current Gain ($I_C = 6.0\text{ Adc}$, $V_{CE} = 3.0\text{ Vdc}$) ($I_C = 12\text{ Adc}$, $V_{CE} = 3.0\text{ Vdc}$)	h_{FE}	750 100	18,000 —	—
Collector-Emitter Saturation Voltage ($I_C = 6.0\text{ Adc}$, $I_B = 24\text{ mA}$) ($I_C = 12\text{ Adc}$, $I_B = 120\text{ mA}$)	$V_{CE(sat)}$	— —	2.0 3.0	Vdc
Base-Emitter Saturation Voltage ($I_C = 12\text{ Adc}$, $I_B = 120\text{ mA}$)	$V_{BE(sat)}$	—	4.0	Vdc
Base-Emitter On Voltage ($I_C = 6.0\text{ Adc}$, $V_{CE} = 3.0\text{ Vdc}$)	$V_{BE(on)}$	—	2.8	Vdc
DYNAMIC CHARACTERISTICS				
Magnitude of Common Emitter Small-Signal Short Circuit Forward Current Transfer Ratio ($I_C = 5.0\text{ Adc}$, $V_{CE} = 3.0\text{ Vdc}$, $f = 1.0\text{ MHz}$)	$ h_{fe} $	4.0	—	MHz
Output Capacitance ($V_{CB} = 10\text{ Vdc}$, $I_E = 0$, $f = 0.1\text{ MHz}$)	C_{ob}	— —	500 300	pF
Small-Signal Current Gain ($I_C = 5.0\text{ Adc}$, $V_{CE} = 3.0\text{ Vdc}$, $f = 1.0\text{ kHz}$)	h_{fe}	300	—	—

* Indicates JEDEC Registered Data.
 (1) Pulse test: Pulse Width = 300 μs , Duty Cycle = 2.0%.



For NPN test circuit reverse diode and voltage polarities.

Figure 2. Switching Times Test Circuit

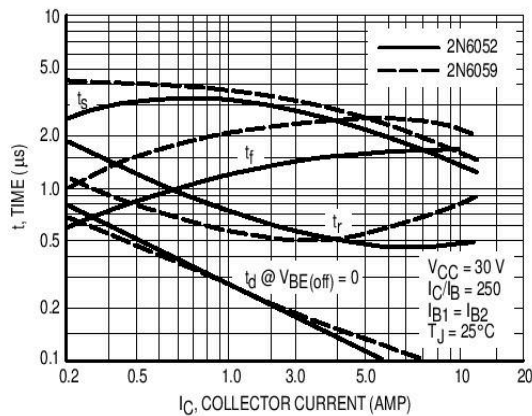


Figure 3. Switching Times

