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## 2N6059 Silicon NPN Power Darlington Transistor TO-3 Type Case

**Description:**

The 2N6059 is a silicon NPN Darlington transistor in a TO-3 type case designed for general-purpose amplifier and low-frequency switching applications.

**Absolute Maximum Ratings:**

Collector-Base Voltage ( $I_E = 0$ ), $V_{CBO}$ .....	100V
Collector-Emitter Voltage ( $V_{BE} = -1.5V$ ), $V_{CEX}$ .....	100V
Collector Emitter Voltage ( $I_B = 0$ ), $V_{CEO}$ .....	100V
Emitter-Base Voltage ( $I_C = 0$ ), $V_{EBO}$ .....	5V
Collector Current, $I_C$	
Continuous .....	12A
Peak .....	20A
Base Current, $I_B$ .....	200mA
Total Dissipation ( $T_C \leq 25^\circ C$ ), $P_{tot}$ .....	150W
Max. Operating Junction Temperature Range, $T_J$ .....	+200°C
Storage Temperature Range, $T_{stg}$ .....	-65° to +200°C
Max. Thermal Resistance, Junction-to-Case, $R_{thJC}$ .....	1.17°C/W

**Electrical Characteristics:** ( $T_C = +25^\circ C$  unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit	
Collector Cutoff Current	$I_{CEX}$	$V_{CE} = 100V, V_{BE} = -1.5V$		-	0.5	mA	
			$T_C = +150^\circ C$	-	5.0	mA	
	$I_{CEO}$	$V_{CE} = 50V, I_B = 0$	-	-	1	mA	
Emitter Cutoff Current	$I_{EBO}$	$V_{BE} = 5V, I_C = 0$	-	-	2.0	mA	
Collector-Emitter Sustaining Voltage	$V_{CEO(sus)}$	$I_C = 100mA$ , Note 1	100	-	-	V	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 6A, I_B = 24mA$ , Note 1	-	-	2	V	
		$I_C = 12A, I_B = 120mA$ , Note 1	-	-	3	V	
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 6A, V_{CE} = 3V$ , Note 1	-	-	2.8	V	
DC Current Gain	$h_{FE}$	$V_{CE} = 3V$ , Note 1	$I_C = 6A$	750	-	-	
			$I_C = 12A$	100	-	-	
Transition Frequency	$f_T$	$I_C = 5A, V_{CE} = 3V, f = 1MHz$	4	-	-	MHz	

Note 1. Pulse Test: Pulse Width = 300µs, Duty Cycle = 1.5%

