Microsemi LAWRENCE

TECHNICAL DATA

NPN DARLINGTON POWER SILICON TRANSISTOR

Qualified per MIL-PRF-19500/502

Devices		*Qualified Level*
2N6058	**2N6059**	**JANTX JANTXV**

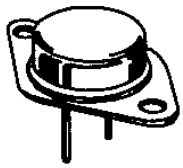
MAXIMUM RATINGS

Ratings	Symbol	2N6058	2N6059	Units
Collector-Emitter Voltage	V_{CEO}	80	100	Vdc
Collector-Base Voltage	V_{CBO}	80	100	Vdc
Emitter-Base Voltage	V_{EBO}	5.0		Vdc
Base Current	I_B	0.2		Adc
Collector Current	I_C	12		Adc
Total Power Dissipation[1] @ $T_C = +25^0C$ @ $T_C = +100^0C$	P_T	150 75		W W
Operating & Storage Junction Temperature Range	T_J, T_{stg}	-55 to +175		^0C

THERMAL CHARACTERISTICS

Characteristics	Symbol	Max.	Unit
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	1.0	$^0C/W$

1) Derate linearly at 1.0 $W/^0C$ above $T_C > +25^0C$



TO-3*
(TO-204AA)

*See appendix A for package outline

ELECTRICAL CHARACTERISTICS ($T_C = 25^0C$ unless otherwise noted)

Characteristics		Symbol	Min.	Max.	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage I_C = 100 mAdc	2N6058 2N6059	$V_{(BR)CEO}$	80 100		Vdc
Collector-Emitter Cutoff Current V_{CE} = 40 Vdc V_{CE} = 50 Vdc	 2N6058 2N6059	I_{CEO}		1.0 1.0	mAdc
Collector-Emitter Cutoff Current V_{CE} = 80 Vdc, V_{BE} = 1.5 Vdc V_{CE} = 100 Vdc, V_{BE} = 1.5 Vdc	 2N6058 2N6059	I_{CEX}		0.5 0.5	mAdc
Emitter-Base Cutoff Current V_{EB} = 5.0 Vdc		I_{EBO}		2.0	mAdc

ELECTRICAL CHARACTERISTICS (con't)

Characteristics	Symbol	Min.	Max.	Unit
ON CHARACTERISTICS [2]				
Forward-Current Transfer Ratio				
I_C = 1.0 Adc, V_{CE} = 3.0 Vdc	h_{FE}	1,000	18,000	
I_C = 6.0 Adc, V_{CE} = 3.0 Vdc		1,000		
I_C = 12 Adc, V_{CE} = 3.0 Vdc		150		
Collector-Emitter Saturation Voltage				
I_C = 12 Adc, I_B = 120 mAdc	$V_{CE(sat)}$		3.0	Vdc
I_C = 6.0 Adc, I_B = 24 mAdc			2.0	
Base-Emitter Saturation Voltage				
I_C = 12 Adc, I_B = 120 mAdc	$V_{BE(sat)}$		4.0	Vdc
Base-Emitter Voltage				
I_C = 6.0 Adc, V_{CE} = 3.0 Vdc	V_{BE}		2.8	Vdc
DYNAMIC CHARACTERISTICS				
Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio				
I_C = 5.0Adc, V_{CE} = 3.0 Vdc, f = 1.0 MHz	$\lvert h_{fe} \rvert$	10	250	
Small-Signal Short-Circuit Forward Current Transfer Ratio				
I_C = 5.0 Adc, V_{CE} = 3.0 Vdc, f = 1.0 kHz	h_{fe}	1,000		
Output Capacitance				
V_{CB} = 10 Vdc, I_E = 0, 100 kHz ≤ f ≤ 1.0 MHz	C_{obo}		300	pF
SWITCHING CHARACTERISTICS				
Turn-On Time				
V_{CC} = 30 Vdc; I_C = 5.0 Adc; I_B = 20 mAdc	t_{on}		2.0	µs
Turn-Off Time				
V_{CC} = 30 Vdc; I_C = 5.0 Adc; I_{B1} = I_{B2} = 20 mAdc	t_{off}		10	µs

SAFE OPERATING AREA

DC Tests

T_C = +25^{0}C + 10^{0}C, -0^0, 1 Cycle, t ≥ 1.0 s

Test 1

V_{CE} = 12.5 Vdc, I_C = 12 Adc

Test 2

V_{CE} = 30 Vdc, I_C = 5.0 Adc

Test 3

V_{CE} = 70 Vdc, I_C = 200 mAdc 2N6058

Test 4

V_{CE} = 90 Vdc, I_C = 155 mAdc 2N6059

(2) Pulse Test: Pulse Width = 300µs, Duty Cycle ≤ 2.0%.

littlediode
COMPONENTS FOR ALL

Littlediode supplies new, hard to find or obsolete electronic components and semiconductors all over the world.

With over two million different components listed you are sure to find the part you need.

Feel free to visit us today at our online store:

LittleDiode.com

Looking forward to providing you with the best possible service.