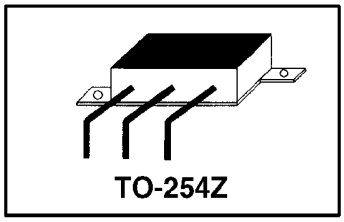
NEW ENGLAND SEMICONDUCTOR

NSG2559

NPN SILICON POWER TRANSISTOR

10 AMPERE
POWER TRANSISTOR
NPN SILICON

- **Medium Speed Switiching**
- **Amplifier**
- **Excellent Safe Operating Area**
- **Total Switching Time @ 3A, 1.15µs**



TO-254Z

MAXIMUM RATINGS

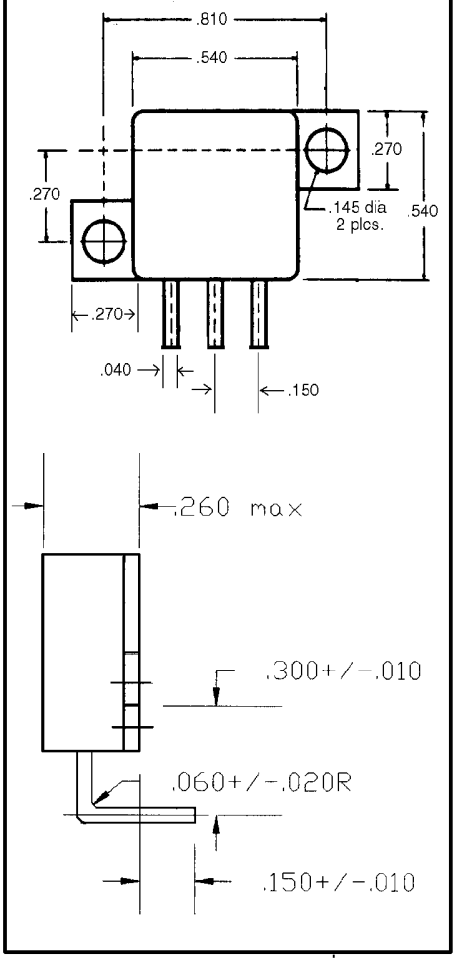
Rating	Symbol	NSG2559	Unit
Collector-Emitter Voltage	V_{CEO}	8O	Vdc
Collector-Base	V_{CB}	100	Vdc
Emitter-Base Voltage	V_{EB}	7.0	Vdc
Collector Current -- Continuous Peak (1)	I_C	10.0	Adc
Base Current -- Continuous	I_B	4.0	Adc
Total Power Dissipation @T_C = 25^{0}C	P_D	115 0.657	Watts
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200	^{0}C

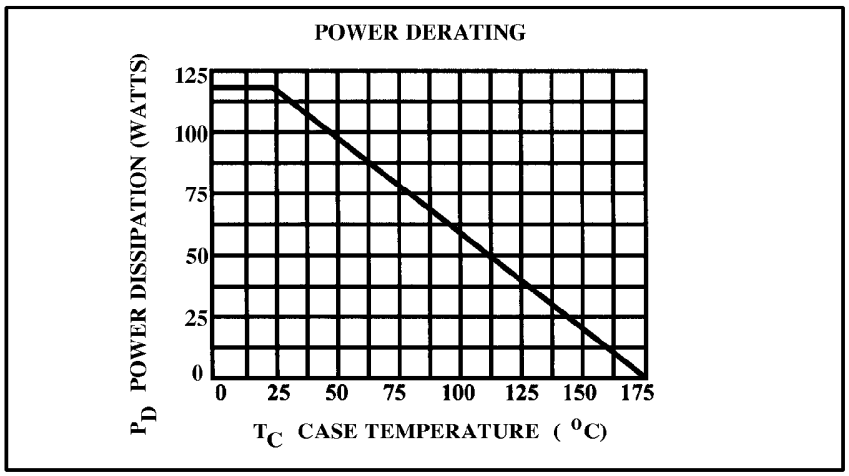
THERMAL CHARACTERISTICS

Characteristics	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.5	°C/W
Junction-To-Free-Air Thermal Resistance	$R_{\theta JA}$		°C/W

(1) Pulse Test: Pulse Width = 10ms, Duty Cycle ≤ 10%.

MECHANICAL OUTLINE





NEW ENGLAND SEMICONDUCTOR
6 Lake Street Lawrence, MA 01841
1-800-446-1158 / (978) 794-1666 / FAX: (978) 689-0803

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ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Characteristics	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Sustaining Voltage I_C = 200 mAdc, I_B = 0	$V_{CEO(SUS)}$	80		Vdc
Collector-Emitter Cutoff Current V_{CE} = 100 Vdc, V_{BE} = - 1.5 Vdc V_{CE} = 100 Vdc, V_{BE} = - 1.5 Vdc, T_C = 150°C	I_{CEX} I_{CEX}		1.0 10.0	mAdc mAdc
Emitter-Base Cutoff Current V_{EB} = 7.0 Vdc	I_{EBO}		5.0	mAdc
ON CHARACTERISTICS (1)				
DC Current Gain I_C = 1.0 Adc, V_{CE} = 2.0 Vdc I_C = 3.0 Adc, V_{CE} = 2.0 Vdc	h_{FE}	50 30	150	
Collector-Emitter Saturation Voltage I_C = 5.0 Adc, I_B = 0.5 Adc	$V_{CE(sat)}$		1.0	Vdc
Base-Emitter Saturation Voltage I_C = 5.0 Adc, I_B = 0.5 Adc	$V_{BE(sat)}$		1.5	Vdc
DYNAMIC CHARACTERISTICS				
Small Signal Current Gain V_{CE} = 10 Vdc, I_C = 0.5 Adc, f = 1.0 mhz	h_{fe}	4.0		
Output Capacitance V_{CB} = 10 Vdc, I_E = 0, f = 1 mhz	C_{OBO}		500	pf

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

SX LEVEL RELIABILITY TESTING

100% SCREENING	GROUP A	GROUP B (Sample)	GROUP C (Sample)
Internal Visual	Visual and Mechanical	Solderability	Physical Dimensions
Temp Cycle	Dc Static Tests 25°C	Temp Cycle	Thermal Shock
Thermal Response	DC Static Tests High Temp	Fine and Gross Leak	Terminal Strength
Constant Acceleration	DC Static Tests Low Temp	Bond Strength	Hermetic Seal
PIND	DynamicTests @ 25°C	Intermittent Op Life	Moisture Resistance
Fine and Gross Leak		Steady State Op Life	Shock Test
HTRB		Thermal Resistance	Vibration Test
Power Burn In		Hi-Temp Life (non operating)	Constant Acceleration
			Salt Atmosphere
			Operation Life

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