



NES

NEW ENGLAND SEMICONDUCTOR

NSG2657
NSG2658

NPN POWER TRANSISTOR

- HIGH VOLTAGE
- FAST SWITCHING
- LOW SATURATION VOLTAGE
- HIGH GAIN

MAXIMUM RATINGS

RATINGS	SYMBOL	VALUE	UNITS
Collector-Emitter Voltage	V_{CE0}	325	Vdc
Collector-Base Voltage	V_{CBO}	500	Vdc
Emitter-Base Voltage	V_{EBO}	5.0	Vdc
Collector Current – Continuous	I_C	2.5	A _{dc}
Base Current – Continuous	I_B	1.0	A _{dc}
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate Above 25°C	P_D	TBD	W W/ $^\circ\text{C}$
Operating & Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200	$^\circ\text{C}$

THERMAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	MAX.	UNIT
Thermal Resistance Junction to Case	$R_{\theta JC}$	TBD	$^\circ\text{C/W}$
Thermal Resistance Junction to Free Air	$R_{\theta JA}$	TBD	$^\circ\text{C/W}$

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

Characteristics	SYMBOL	Min	Max	UNITS
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OFF CHARACTERISTICS

Collector-Emitter Sustaining Voltage (1) $I_C = 100 \text{ mA}_{dc}, I_B = 0$	$V_{CE0(sust)}$	325		Vdc
Collector-Emitter Cutoff Current $V_{CE} = 350 \text{ Vdc}, I_B = 0$	I_{CEO}		0.25	mA _{dc}
Collector-Emitter Cutoff Current $V_{CE} = 500 \text{ Vdc}, V_{BE} = 1.5 \text{ A}_{dc}$	I_{CEV}		0.1	mA _{dc}
Emitter-Base Cutoff Current $V_{EB} = 6.0 \text{ Vdc}, I_C = 0$	I_{EBO}		5.0	mA _{dc}

ON CHARACTERISTICS

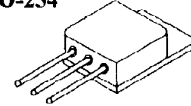
DC Current Gain(1) $I_C = 1.0 \text{ A}_{dc}, V_{CE} = 5.0 \text{ Vdc}$ $I_C = 2.5 \text{ A}_{dc}, V_{CE} = 5.0 \text{ Vdc}$	h_{FE}	30 10	90	-
Collector-Emitter Saturation Voltage $I_C = 1.0 \text{ A}_{dc}, I_B = 0.1 \text{ A}_{dc}$ $I_C = 2.5 \text{ A}_{dc}, I_B = 0.5 \text{ A}_{dc}$	$V_{CE(sat)}$		1.0 2.5	Vdc
Base-Emitter Saturation Voltage $I_C = 2.5 \text{ A}_{dc}, I_B = 0.5 \text{ A}_{dc}$	$V_{BE(sat)}$		2.5	Vdc

DYNAMIC CHARACTERISTICS

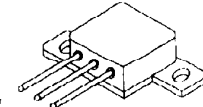
Current-Gain - Bandwidth Product $I_C = 0.2 \text{ A}_{dc}, V_{CE} = 10 \text{ Vdc}, f = 1.0 \text{ MHz}$	f_T	5.0		
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(1) Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2.0\%$.

TO-254



TO-254Z



MECHANICAL OUTLINE

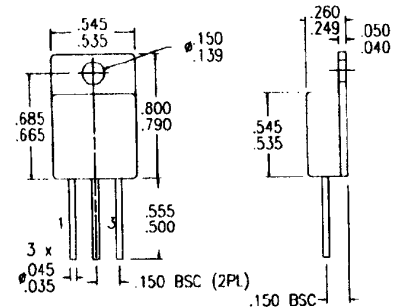
TO-254

PIN OUT:

PIN 1: EMITTER

PIN 2: BASE

PIN 3: COLLECTOR



MECHANICAL OUTLINE

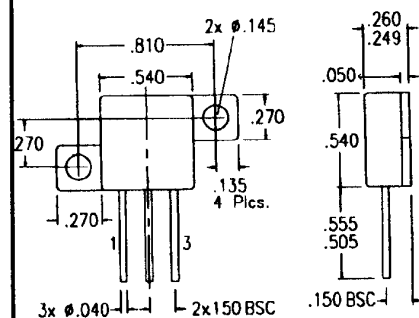
TO-254Z

PIN OUT:

PIN 1: EMITTER

PIN 2: BASE

PIN 3: COLLECTOR



NEW ENGLAND SEMICONDUCTOR

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

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