NEW ENGLAND SEMICONDUCTOR

NSP5153

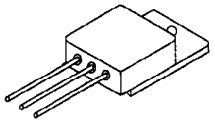
PRELIMINARY

MEDIUM-POWER PNP SILICON TRANSISTORS

...designed for switching and wide band amplifier applications.

- LOW COLLECTOR-EMITTER SATURATION VOLTAGE
- DC CURRENT GAIN SPECIFIED TO 5 AMPERES
- EXCELLENT SAFE OPERATING AREA

TO-257AA



5 AMPERE

POWER TRANSISTOR PNP SILICON

80-100 VOLTS
25 WATTS

MAXIMUM RATINGS*

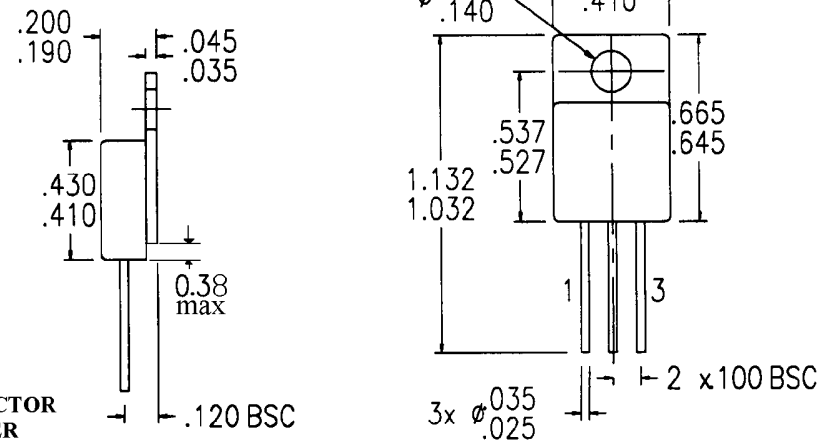
RATINGS	SYMBOL	NSP5153	UNITS
Collector-Emitter Voltage	V_{CEO}	100	Vdc
Collector-Base Voltage	V_{CBO}	80	Vdc
Emitter-Base Voltage	V_{EBO}	5.5	Vdc
Collector Current -- Continuous	I_C	5.0	Adc
Base Current	I_B	1.0	Adc
Total Power Dissipation @ $T_C = 25^0C$ Derate above 25^0C	P_D	25 200	W $mW/^0C$
Operating & Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200	^0C

THERMAL CHARACTERISTICS

CHARACTERISTICS	SYMBOL	MAX.	UNITS
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	5.0	$^0C\backslash W$

*Indicates JEDEC Required Data

MECHANICAL OUTLINE



STYLE 1:
PIN 1: COLLECTOR
PIN 2: EMITTER
PIN 3: BASE

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6 Lake Street Lawrence, MA 01841
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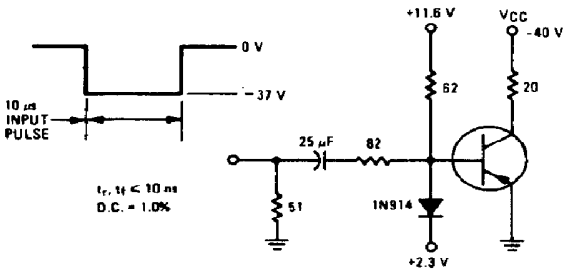
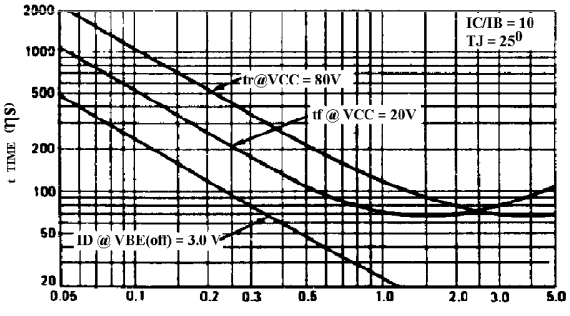
ELECTRICAL CHARACTERISTICS ($T_C = 25^0C$ unless otherwise noted)

Characteristics	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Sustaining Voltage (1) I_C = 100 mAdc, I_B = 0	$V_{CEO(sus)}$	80		Vdc
Collector Cutoff Current V_{CE} = 4.0 Vdc, I_B = 0	I_{CEO}		50	µAdc
Collector Cutoff Current V_{CE} = 60 V_{CB}, $V_{BE)}$ = 0 Vdc V_{CE} = 100 V_{CB}, $V_{BE)}$ = 0 Vdc	I_{CES}		1.0 1.0	µAdc mAdc
Collector Cutoff Current V_{CB} = 80 Vdc, I_E = 0	I_{CBO}		10	µAdc
Emitter Cutoff Current V_{BE} = 5.5 Vdc, I_C = 0	I_{EBO}		1.0	mAdc
ON CHARACTERISTICS (1)				
DC Current Gain I_C = 50 mAdc, V_{CE} = 5.0 Vdc I_C = 2.5 Adc, V_{CE} = 5.0 Vdc I_C = 5.0 Adc, V_{CE} = 5.0 Vdc	h_{FE}	50 70 40	200	
Collector-Emitter Saturation Voltage I_C = 2.5 Adc, I_B = 0.25 Adc I_C = 5.0 Adc, I_B = 0.5 Adc	$V_{CE(sat)}$		0.75 1.5	Vdc
Base-Emitter Voltage I_C = 2.5 Adc, I_B = 0.25 Adc I_C = 5.0 Adc, I_B = 0.5 Adc	V_{BE}		1.45 2.2	Vdc
DYNAMIC CHARACTERISTICS				
Current-Gain -- Bandwidth Product (2) I_C = 0.5 Adc, V_{CE} = 10 Vdc, f_{TEST} = 10 MHz	f_T	30		MHz
Output Capacitance V_{CB} = 10 Vdc, I_E = 0, f = 100 kHz	C_{obo}		300	pf
Input Capacitance V_{BE} = 2.0 Vdc, I_C = 0, f = 100 kHz	C_{ibo}		1250	pf
SWITCHING CHARACTERISTICS				
Delay Time	V_{CC} = 40 Vdc, $V_{BE(off)}$ = 3.0 Vdc	t_d		100	ηs
Rise Time	I_C = 2.0 Adc, I_{B1} = 0.2 Adc	t_r		100	ηs
Storage Time	V_{CC} = 40 Vdc, I_C = 2.0 Adc,	t_s		2.0	µs
Fall Time	I_{B1} = I_{B2} = 0.2 Adc	t_f		200	ηs

(1)Pulse Test: Pulse Width = 300µs, Duty Cycle ≤ 2.0%.
(2) $f_T = |h_{fe}| = f_{Test}$





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