RoHS Available

PNP SILICON POWER TRANSISTOR

DESCRIPTION

These 2N6317 and 2N6318 devices are an excellent choice for un-tuned amplifier applications. It is also ideal for general purpose power switch and amplifier applications. Microsemi also offers numerous other products to meet higher and lower power voltage regulation applications.

TO-213AA (TO-66) Package

Important: For the latest information, visit our website http://www.microsemi.com.

FEATURES

- Hermetically sealed.
- Complimentary pairing with the NPN 2N6315 and 2N6316.
- RoHS compliant versions available.

APPLICATIONS / BENEFITS

- Convenient package.
- Mechanically rugged.
- Commercial, industrial, and military uses.

MAXIMUM RATINGS @ 25 ºC unless otherwise stated

Parameters/Test Conditions		Symbol	Value	Unit
Junction and Storage Temperature		T_J and T_{STG}	-65 to +200	^oC
Thermal Resistance Junction-to-Lead (1)		$R_{\Theta JL}$	235	^oC
Collector-Base Voltage	2N6317 2N6318	V_{CBO}	60 80	V
Emitter-Base Voltage		V_{EBO}	5	V
Collector-Emitter Voltage	2N6317 2N6318	V_{CEO}	60 80	V
Continuous Operating Collector Current		I_C	7	A
Continuous Base Current			2	A
Total Power Dissipation (2)		P_T	90	W

NOTES: 1. At 1/8 inch from case for 10 seconds.
2. Derate linearly at 0.515 W/ºC.

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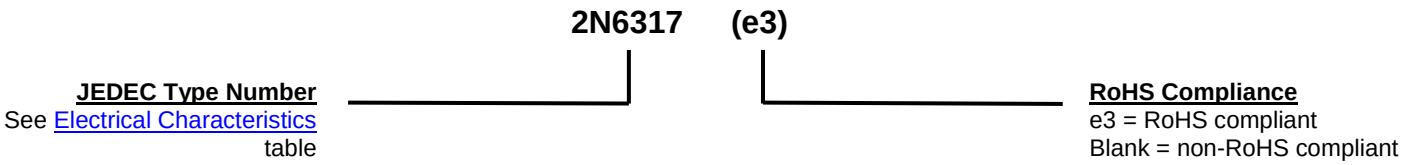
MECHANICAL and PACKAGING

- CASE: Hermetic, TO-66 package. Nickel plate with nickel cap.
- TERMINALS: Solder dipped (Sn63/Pb37) over nickel plated alloy 52. RoHS compliant matte-tin plating is also available.
- MARKING: MSC, part number, date code, polarity symbol.
- WEIGHT: Approximately 5.7 grams.
- See Package Dimensions on last page.

PART NOMENCLATURE



SYMBOLS & DEFINITIONS

Symbol	Definition
I_B	Base current
T_C	Case temperature
V_{CB}	Collector-base voltage
V_{CC}	Collector-supply voltage
V_{EB}	Emitter-base voltage

ELECTRICAL CHARACTERISTICS @ 25 ºC unless otherwise stated

Parameters / Test Conditions		Symbol	Min.	Max.	Unit
STATIC CHARACTERISTICS					
Collector Cutoff Current V_{CE} = 60 V_{BE} = 1.5 V, T_C = 150 ºC V_{CE} = 80 V_{BE} = 1.5 V, T_C = 150 ºC	2N6317 2N6318	I_{CEX}		2.0	mA
Collector Cutoff Current V_{CE} = 60 V_{BE} = 1.5 V V_{CE} = 80 V_{BE} = 1.5 V	2N6317 2N6318	I_{CEX}		0.25	mA
Emitter Cutoff Current V_{EB} = 5 V		I_{EBO}		1.0	mA
Collector-Emitter Open Base Sustain Voltage (1) I_B = 0, I_C = 100 mA	2N6317 2N6318	$V_{CEO(sus)}$	60 80		
Collector Cutoff Current, Base Open I_B = 0, V_{CE} = 30 V I_B = 0, V_{CE} = 40 V	2N6317 2N6318	I_{CEO}		0.5	mA
DC Forward Current Transfer Ratio (1) I_C = 7 A, V_{CE} = 4 V I_C = 2.5 A, V_{CE} = 4 V I_C = 0.5 A, V_{CE} = 4 V		h_{FE}	4 25 35	125	
Collector-Emitter Saturation Voltage (1) I_C = 7.0 A, I_B = 1.75 A I_C = 4.0 A, I_B = 0.4 A		$V_{CE(sat)}$		2.0 1.0	V
Base-Emitter Saturation Voltage (1) I_C = 7.0 A, I_B = 1.75 A		$V_{BE(sat)}$		2.5	V
Base-Emitter Voltage (1) I_C = 2.5 A, V_{CE} = 4.0 V		V_{BE}		1.5	V

NOTE: 1. Pulse Width ≤ 300 µs; duty cycle ≤ 2 %.

DYNAMIC CHARACTERISTICS

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio V_{CE} = 10 V, I_C = 0.25 A, f = 1 MHz	$\|h_{fe}\|$	4		
Common Base Output V_{CB} = 10 V, I_E = 0 A, f = 1 MHz	C_{ob}		300	pF
Common Emitter Small-Signal Short-Circuit Forward Current Trans-Ratio V_{CE} = 4 V, I_C = 0.5 A, f = 1 kHz	h_{fe}	20		

SWITCHING CHARACTERISTICS

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
Rise time V_{CC} = 30 V, I_C = 25 A, I_{B1} = I_{B2} = 0.25 A (see figure 2)	t_r		0.7	µs
Storage time V_{CC} = 30 V, I_C = 25 A, I_{B1} = I_{B2} = 0.25 A (see figure 2)	t_s		1.0	µs
Fall time V_{CC} = 30 V, I_C = 25 A, I_{B1} = I_{B2} = 0.25 A (see figure 2)	t_f		0.8	µs

GRAPHS

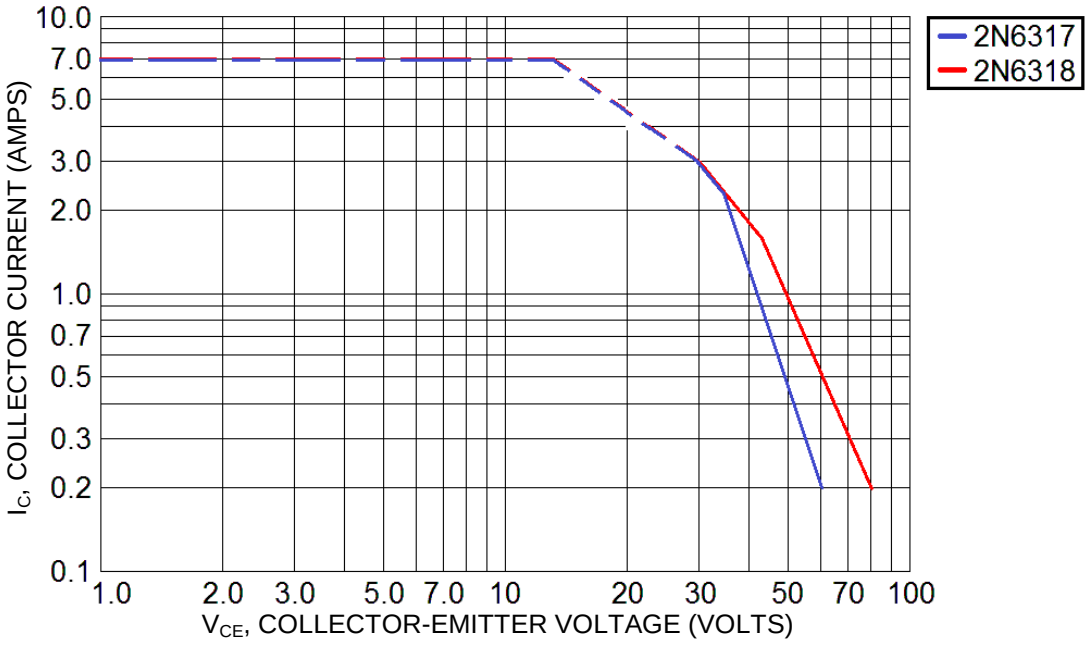


Figure 1
Safe Operating Area (T_C = 25 ºC)

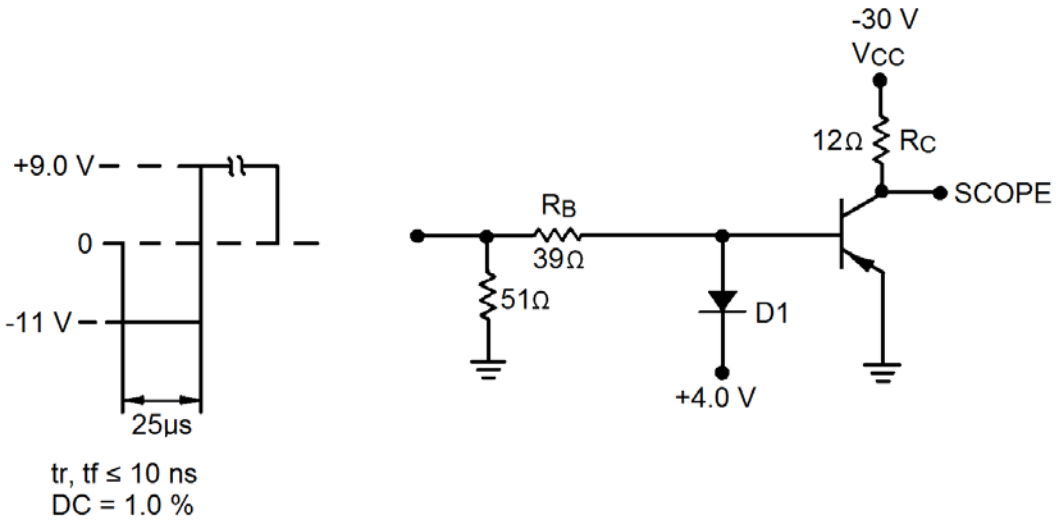
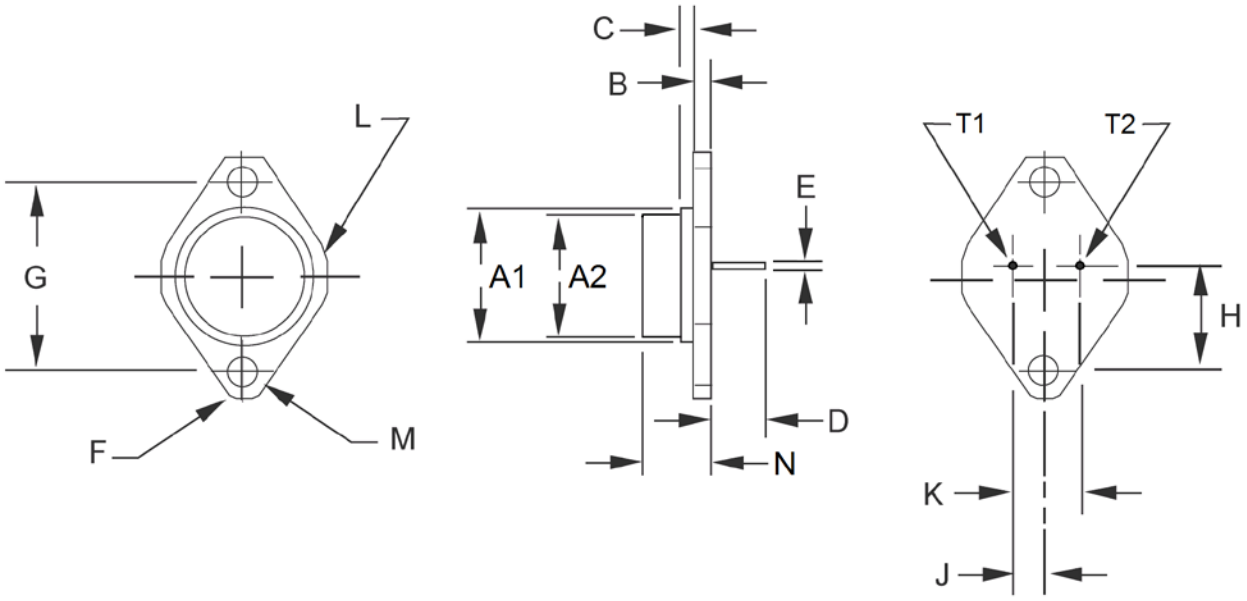


Figure 2
Switching Times Test Circuit

PACKAGE DIMENSIONS



DIM	INCH		MILLIMETERS	
	MIN	MAX	MIN	MAX
A1	.470	.500	11.94	12.70
A2	-	.620	-	15.75
B	.050	.075	1.27	1.91
C	-	.050	-	1.27
D	.360	-	9.14	-
E	.028	.034	0.71	0.86
F	.145 radius		3.68 radius	
G	.958	.962	24.33	24.43
H	.570	.590	14.48	14.99
J	.093	.107	2.36	2.72
K	.190	.210	4.83	5.33
L	.350 radius		8.89 radius	
M	.142	.152	3.61	3.86
N	.250	.340	6.35	8.64
T1	Base			
T2	Emitter			
Case	Collector			