2N2484

**60 Volts
50mAmps**

**NPN
BIPOLAR
TRANSISTOR**

Features

- Meets MIL-S-19500/376
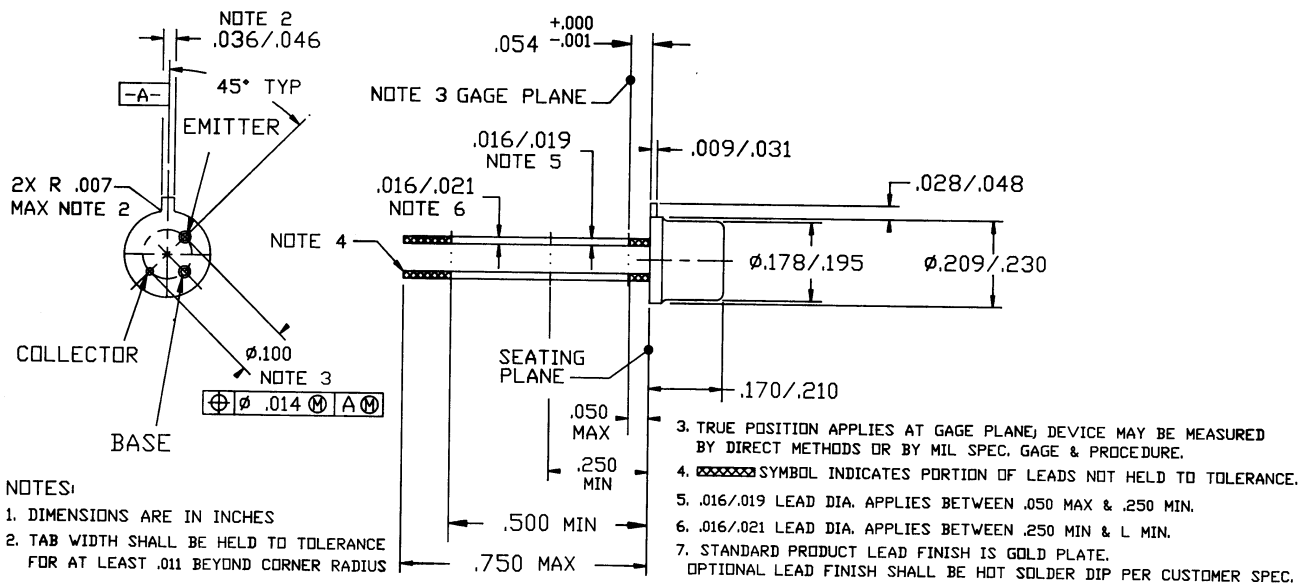- Collector-Base Voltage 60V
- Collector Current: 50 mA

Maximum Ratings

RATING	SYMBOL	MAX.	UNIT
Collector-Emitter Voltage	V_{CEO}	60	Vdc
Collector-Base Voltage	V_{CBO}	60	Vdc
Emitter-Base Voltage	V_{EBO}	6.0	Vdc
Collector Current--Continuous	I_C	50	mAdc
Total Device Dissipation @ $T_A = 25^{o}C$ Derate above $25^{o}C$	P_D	360 2.06	mW mW/^{o}C
Total Device Dissipation @ $T_C = 25^{o}C$ Derate above $25^{o}C$	P_D	1.2 6.85	Watts mW/^{o}C
Operating Temperature Range	T_J	-65 to + 200	^{o}C
Storage Temperature Range	T_S	-65 to + 200	^{o}C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	485	$^{o}C/W$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	146	$^{o}C/W$

Mechanical Outline

NOTES:
1. DIMENSIONS ARE IN INCHES
2. TAB WIDTH SHALL BE HELD TO TOLERANCE FOR AT LEAST .011 BEYOND CORNER RADIUS
3. TRUE POSITION APPLIES AT GAGE PLANE; DEVICE MAY BE MEASURED BY DIRECT METHODS OR BY MIL SPEC. GAGE & PROCEDURE.
4. ⬚⬚⬚ SYMBOL INDICATES PORTION OF LEADS NOT HELD TO TOLERANCE.
5. .016/.019 LEAD DIA. APPLIES BETWEEN .050 MAX & .250 MIN.
6. .016/.021 LEAD DIA. APPLIES BETWEEN .250 MIN & L MIN.
7. STANDARD PRODUCT LEAD FINISH IS GOLD PLATE. OPTIONAL LEAD FINISH SHALL BE HOT SOLDER DIP PER CUSTOMER SPEC.

Electrical Parameters (T$_A$ @ 25°C unless otherwise specified)

CHARACTERISTICS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Off Characteristics					
Collector-Emitter Breakdown Voltage(2) (I$_C$ = 10 mAdc, I$_B$ = 0)	**BV$_{CEO}$**	60	--	--	Vdc
Collector-Emitter Breakdown Voltage (I$_C$ = 10 µAdc, I$_E$ = 0)	**BV$_{CBO}$**	60	--	--	Vdc
Emitter-Base Breakdown Voltage (I$_E$ = 10 µAdc, I$_C$ = 0)	**BV$_{EBO}$**	6.0	--	--	Vdc
Collector-Emitter Cutoff Current (V$_{CB}$ = 45 Vdc, I$_E$ = 0)	**I$_{CBO}$**	--	--	5	nAdc
(V$_{CB}$ = 45 Vdc, I$_E$ = 0, T$_A$ = 150°C)		--	--	10	uAdc
Emitter Cutoff Current (V$_{EB}$ = 5.0 Vdc, I$_C$ = 0)	**I$_{EBO}$**	--	--	2	nAdc
D.C. Current Gain (I$_C$ = 1.0 µAdc, V$_{CE}$ = 5.0 Vdc)	**H$_{fe}$**	45		--	--
(I$_C$ = 10 µAdc, V$_{CE}$ = 5.0 Vdc)		200		500	
(I$_C$ = 10 µAdc, V$_{CE}$ = 5.0 Vdc, T$_A$ = -55°C)		35		--	
(I$_C$ = 100 µAdc, V$_{CE}$ = 5.0 Vdc)		225		675	
(I$_C$ = 500 µAdc, V$_{CE}$ = 5.0 Vdc)		250		800	
(I$_C$ = 1.0 mAdc, V$_{CE}$ = 5.0 Vdc)		250		800	
(I$_C$ = 10 mAdc, V$_{CE}$ = 5.0 Vdc)		225		800	
Collector-Emitter Saturation Voltage (I$_C$ = 1.0 mAdc, I$_B$ = 0.1 mAdc)	**V$_{CE(SAT)}$**	--		0.30	Vdc
Base-Emitter On Voltage (I$_C$ = 0.1 mAdc, V$_{CE}$ = 5.0 Vdc)	**V$_{BE(on)}$**	0.5		0.7	Vdc
Small-signal short-circuit forward current transfer ratio	**h$_{fe}$**				
(I$_C$ = 0.05 mAdc, V$_{CE}$ = 5.0 Vdc, f = 5 MHz)		3		--	
(I$_C$ = 0.5 mAdc, V$_{CE}$ = 5.0 Vdc, f = 30 MHz)		2		7	
Output Capacitance (V$_{CB}$ = 5.0 Vdc, I$_E$ = 0, 100kHz $\leq$ f $\leq$ 1MHz)	**C$_{OBO}$**	--		5.0	pf
Input Capacitance (V$_{EB}$ = 0.5 Vdc, I$_C$ = 0, 100kHz $\leq$ f $\leq$ 1MHz)	**C$_{IBO}$**	--		6.0	pf
Input Impedance (I$_C$ = 1.0 mAdc, V$_{CE}$ = 5.0 Vdc, f = 1.0 kHz)	**h$_{ie}$**	3.5	--	24	kΩ
Voltage Feedback Ratio (I$_C$ = 1.0 mAdc, V$_{CE}$ = 5.0 Vdc, f =1.0kHz)	**h$_{re}$**	--	--	8	x 10^{-4}
Small—Signal Current Gain (I$_C$ = 1.0 mAdc, V$_{CE}$ 5.0 Vdc, f = kHz)	**h$_{fe}$**	250	--	900	--
Ouput Admittance (I$_C$ = 1.0 mAdc, V$_{CE}$ = 5.0 Vdc, f = 1.0 kHz)	**h$_{oe}$**	--	--	40	µmhos
Noise Figure	**NF**				dB
(I$_C$ = 10 µAdc, V$_{CE}$ = 5.0 Vdc, R$_S$ = 10 kΩ, f = 100 Hz		--		7.5	
(I$_C$ = 10 µAdc, V$_{CE}$ = 5.0 Vdc, R$_S$ = 10 kΩ, f = 1.0kHz		--	--	3.0	
(I$_C$ = 10 µAdc, V$_{CE}$ = 5.0 Vdc, R$_S$ = 10 kΩ, f = 10 kHz		--	--	2.0	
(I$_C$ = 10 µAdc, V$_{CE}$ = 5.0 Vdc, R$_S$ = 10 kΩ, f = 10 Hz to 15.7Hz)		--	--	3.0	

(1) RθJA is measured with the device soldered into a typical printed circuit board.
(2) Pulse Test: Pulse Width $\leq$ 300 µs, Duty Cycle $\leq$ 2.0%.