ELECTRONICS, INC.
44 FARRAND STREET
BLOOMFIELD, NJ 07003
(973) 748–5089

NTE5906, NTE5907, NTE5980 thru NTE6005 Silicon Power Rectifier Diode, 40 Amp

Features:

- High Surge Current Capability
- High Voltage Available
- Designed for a Wide Range of Applications
- Available in Anode–to–Case or Cathode–to–Case Style

Ratings and Characteristics:

Average Forward Current (T_C = +140°C Max), $I_{F(AV)}$ 40A

Maximum Forward Surge Current, I_{FSM}

50Hz 480A

60Hz 500A

Fusing Current, I^2t

50Hz . . . . . 1150A^2s

60Hz . . . . . 1050A^2s

Fusing Current, $I^2\sqrt{t}$ . . . . . 16000$A^2\sqrt{s}$

Maximum Reverse Recovery Voltage Range, V_{RRM} . . . . . 50 to 1600V

Voltage Ratings:

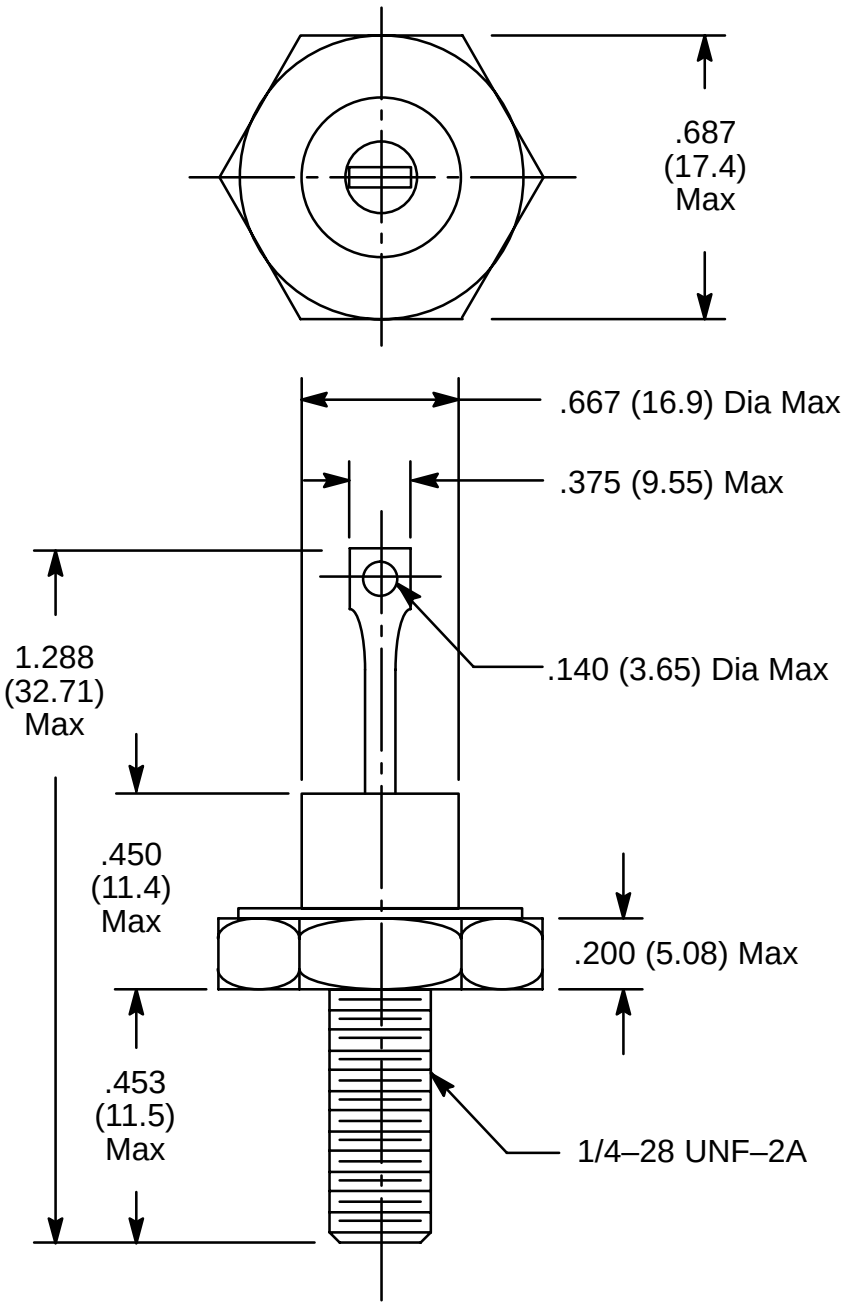
NTE Type Number		V_{RRM}–Max Repetitive Peak Reverse Volt. (V)	V_{RSM}–Max Non–Repetitive Peak Reverse Voltage (V) t_p < 5ms	V_R–Max. Direct Reverse Voltage (V)	$V_{R(SR)}$ Minimum Avalanche Voltage (V)	I_{RM}–Max Reverse Current Rated V_{RRM} (mA)
Cathode to Case	Anode to Case	T_J = –65° to +150°C	T_J = +25° to +150°C	T_J = –65° to +150°C	T_J = +25°C	T_J = +150°C
5980	5981	50	100	50	–	15
5982	5983	100	200	100	–	15
5986	5987	200	300	200	–	15
5988	5989	300	450	300	–	15
5990	5991	400	500	400	500	15
5992	5993	500	600	500	600	9
5994	5995	600	720	600	725	9
5998	5999	800	960	800	960	9
6002	6003	1000	1200	1000	1150	9
5906	5907	1200	1400	1200	1350	9
6004	6005	1600	1700	1600	1700	9

Electrical Specifications:

Parameter	Symbol	Test Conditions		Rating	Unit
Maximum Average Forward Current	$I_{F\ (AV)}$	180° sinusoidal condition, T_C = +140°C Max		40	A
Maximum Peak One–Cycle Non–Repetitive Surge Current	I_{FSM}	Half cycle 50Hz sine wave or 8ms rectangular pulse	Following any rated load condition and with rated V_{RRM} applied	480	A
		Half cycle 60Hz sine wave at 5ms rectangular pulse		500	A
		Half cycle 50Hz sine wave or 6ms rectangular pulse	Following any rated load condition and with V_{RRM} applied following surge = 0	570	A
		Half cycle 60Hz sine wave at 3ms rectangular pulse		586	A
Maximum I^2t for Fusing	I^2t	t = 10ms	With rated V_{RRM} applied following surge	1150	A^2s
		t = 8.3ms		1050	A^2s
Maximum I^2t for Individual Device Fusing		t = 10ms	With V_{RRM} = 0 following surge	1600	A^2s
		t = 8.3ms		1450	A^2s
Maximum $I^2\sqrt{t}$	$I^2\sqrt{t}$	t = 0.1 to 10ms, V_{RRM} = 0 following surge		16000	$A^2\sqrt{t}$
Maximum Peak Forward Voltage	V_{FM}	$I_{F\ (AV)}$ = 40A (125 peak), T_J = +25°C		1.30	V
Maximum Value of Threshold Voltage	$V_{M\ (TO)}$	T_J = +100°C		0.69	V
Maximum Value of Forward Slope Resistance	r_t	T_J = +100°C		3.79	mΩ

Thermal–Mechanical Specifications:

Parameter	Symbol	Test Conditions	Rating	Unit
Maximum Operation Junction Temperature	T_J		–65 to + 190	°C
Maximum Storage Temperature	T_{stg}		–65 to + 190	°C
Maximum Internal Thermal Resistance Junction–to–Case	R_{thJC}	DC operation	1.00	K/W
Thermal Resistance, Case–to–Sink	R_{thCS}	Mounting surface flat, smooth and greased	0.25	K/W
Mounting Torque	T	Non–lubricated threads	2.3 – 3.4 (20 – 30)	m•N (in•lb)
Approximate Weight	wt		17 (0.8)	g (oz)


.687
(17.4)
Max
.667 (16.9) Dia Max
.375 (9.55) Max
1.288
(32.71)
Max
.140 (3.65) Dia Max
.450
(11.4)
Max
.200 (5.08) Max
.453
(11.5)
Max
1/4–28 UNF–2A