![Chipsmall logo]

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

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NTS12100EMFS, NRVTS12100EMFS

Very Low Leakage Trench-based Schottky Rectifier

ON Semiconductor®

TRENCH SCHOTTKY RECTIFIERS
12 AMPERES
100 VOLTS

1,2,3 ○——▷|——○ 5,6

Features

- Fine Lithography Trench−based Schottky Technology for Very Low Forward Voltage and Low Leakage
- Fast Switching with Exceptional Temperature Stability
- Low Power Loss and Lower Operating Temperature
- Higher Efficiency for Achieving Regulatory Compliance
- Low Thermal Resistance
- High Surge Capability
- NRV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC−Q101 Qualified and PPAP Capable
- These are Pb−Free and Halide−Free Devices

Typical Applications

- Switching Power Supplies including Notebook / Netbook Adapters, ATX and Flat Panel Display
- High Frequency and DC−DC Converters
- Freewheeling and OR−ing diodes
- Reverse Battery Protection
- LED Lighting
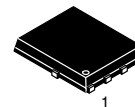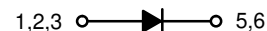- Instrumentation

Mechanical Characteristics:

- Case: Epoxy, Molded
- Epoxy Meets Flammability Rating UL 94−0 @ 0.125 in.
- Lead Finish: 100% Matte Sn (Tin)
- Lead and Mounting Surface Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
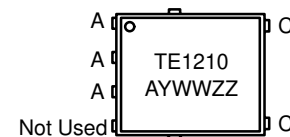- Device Meets MSL 1 Requirements

SO−8 FLAT LEAD CASE 488AA STYLE 2

MARKING DIAGRAM

```
A           C
A    TE1210
A    AYWWZZ
Not Used    C
```

TE1210 = Specific Device Code
A   = Assembly Location
Y   = Year
W   = Work Week
ZZ   = Lot Traceability

ORDERING INFORMATION

Device	Package	Shipping†
NTS12100EMFST1G, NRVTS12100EMFST1G	SO−8 FL (Pb−Free)	1500 / Tape & Reel
NTS12100EMFST3G, NRVTS12100EMFST3G	SO−8 FL (Pb−Free)	5000 / Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

NTS12100EMFS, NRVTS12100EMFS

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	 100	V
Average Rectified Forward Current (Rated V_R, T_C = 163°C)	$I_{F(AV)}$	12	A
Peak Repetitive Forward Current, (Rated V_R, Square Wave, 20 kHz, T_C = 160°C)	I_{FRM}	24	A
Non−Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz)	I_{FSM}	200	A
Storage Temperature Range	T_{stg}	−65 to +175	°C
Operating Junction Temperature	T_J	−55 to +175	°C
Unclamped Inductive Switching Energy (10 mH Inductor, Non−repetitive)	E_{AS}	100	mJ
ESD Rating (Human Body Model)		3B	
ESD Rating (Machine Model)		M4	

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

THERMAL CHARACTERISTICS

Characteristic	Symbol	Typ	Max	Unit
Thermal Resistance, Junction−to−Case, Steady State (Assumes 600 mm^2 1 oz. copper bond pad, on a FR4 board)	$R_{\theta JC}$	2.0	–	°C/W

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Typ	Max	Unit
Instantaneous Forward Voltage (Note 1) (i_F = 5 A, T_J = 25°C) (i_F = 12 A, T_J = 25°C) (i_F = 5 A, T_J = 125°C) (i_F = 12 A, T_J = 125°C)	v_F	 0.52 0.65 0.46 0.57	 – 0.73 – 0.64	V
Instantaneous Reverse Current (Note 1) (V_R = 70 V, T_J = 25°C) (Rated dc Voltage, T_J = 25°C) (V_R = 70 V, T_J = 125°C) (Rated dc Voltage, T_J = 125°C)	i_R	 1.3 5.0 1.8 4.3	 – 55 – 15	 μA μA mA mA

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.
1. Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2.0%.

NTS12100EMFS, NRVTS12100EMFS
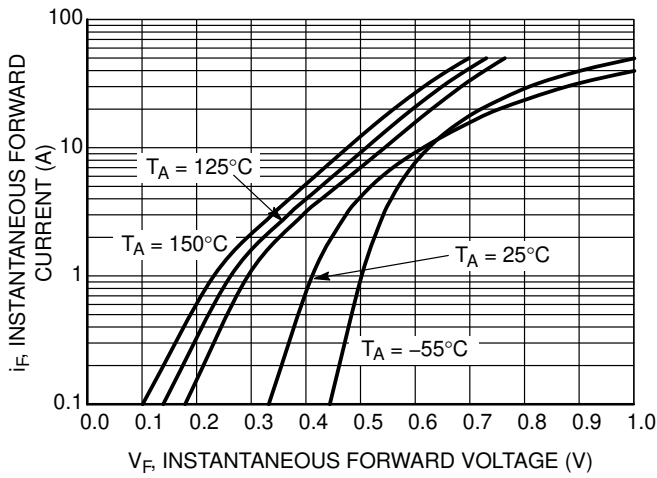
TYPICAL CHARACTERISTICS

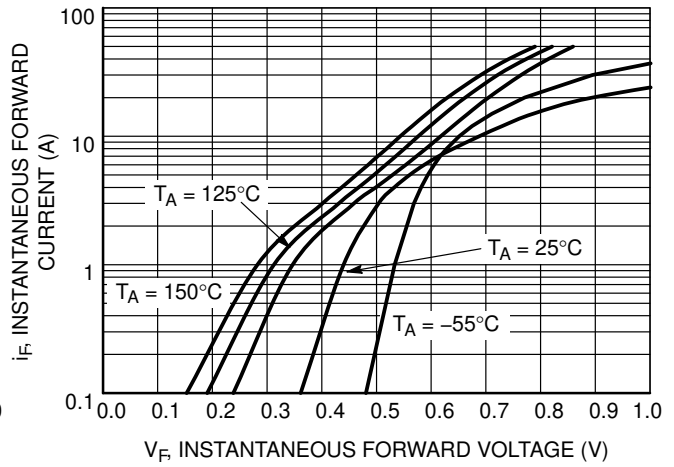**Figure 1. Typical Instantaneous Forward Characteristics**

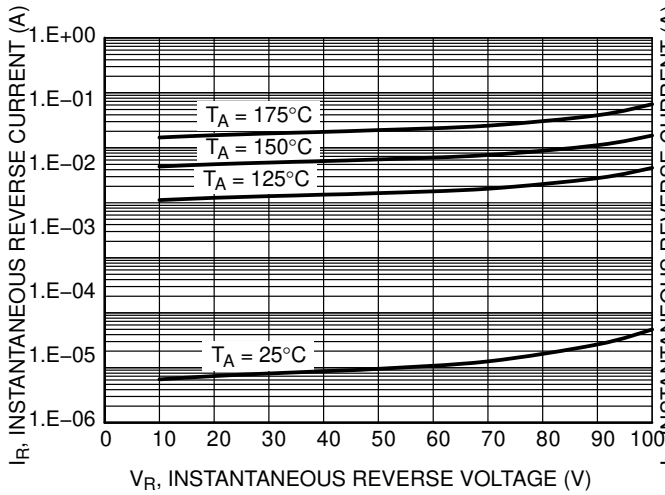

Figure 2. Maximum Instantaneous Forward Characteristics
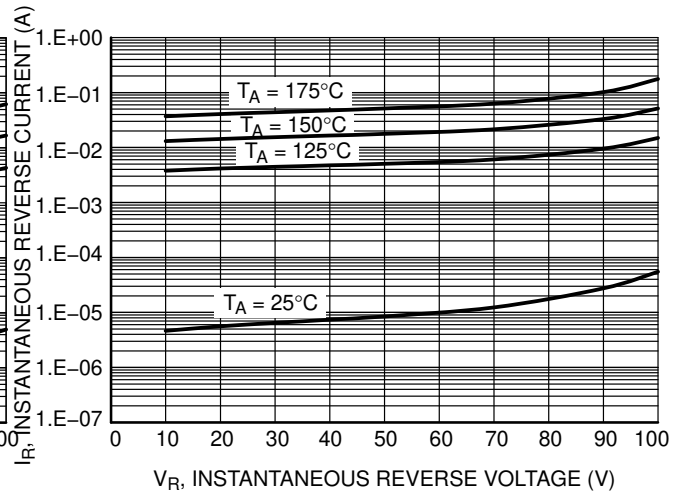

Figure 3. Typical Reverse Characteristics
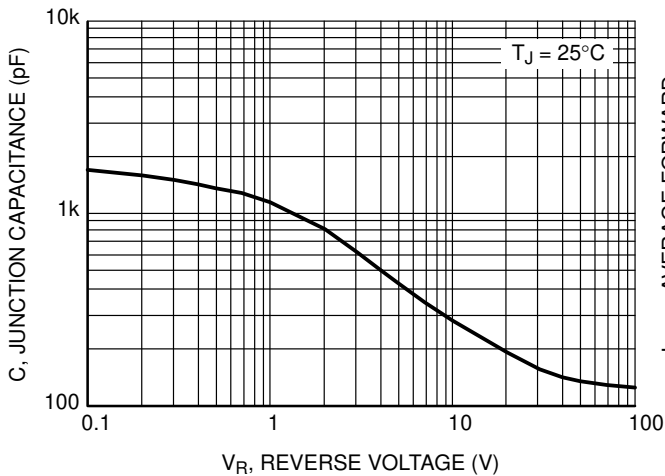

Figure 4. Maximum Reverse Characteristics
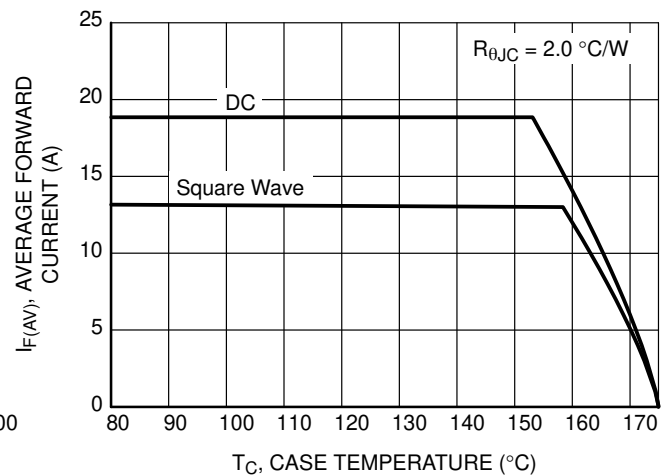

Figure 5. Typical Junction Capacitance

Figure 6. Current Derating TO−220AB

NTS12100EMFS, NRVTS12100EMFS

TYPICAL CHARACTERISTICS
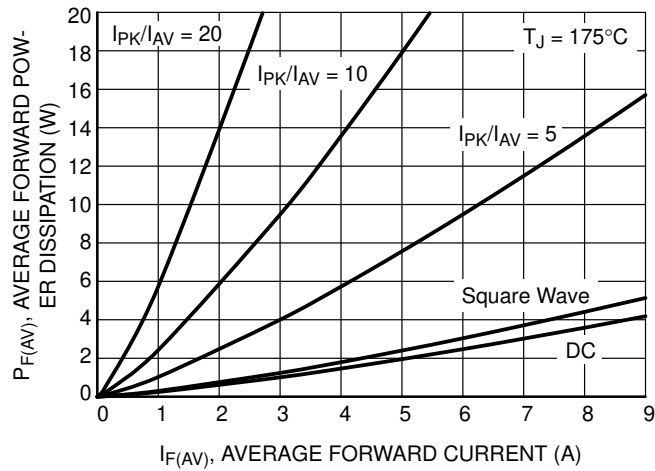
Figure 7. Forward Power Dissipation
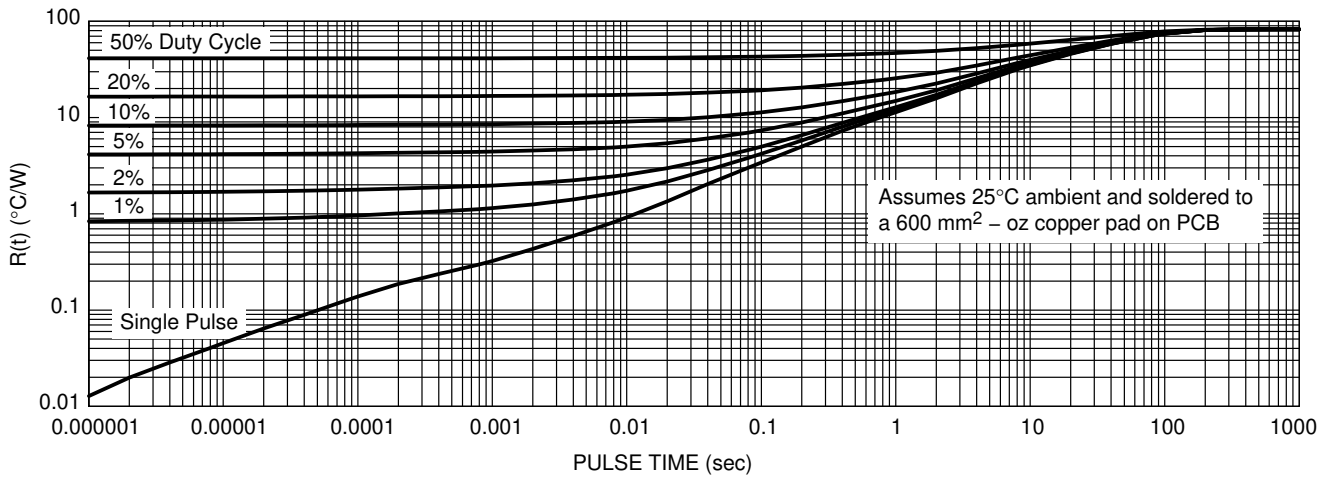
Figure 8. Thermal Characteristics
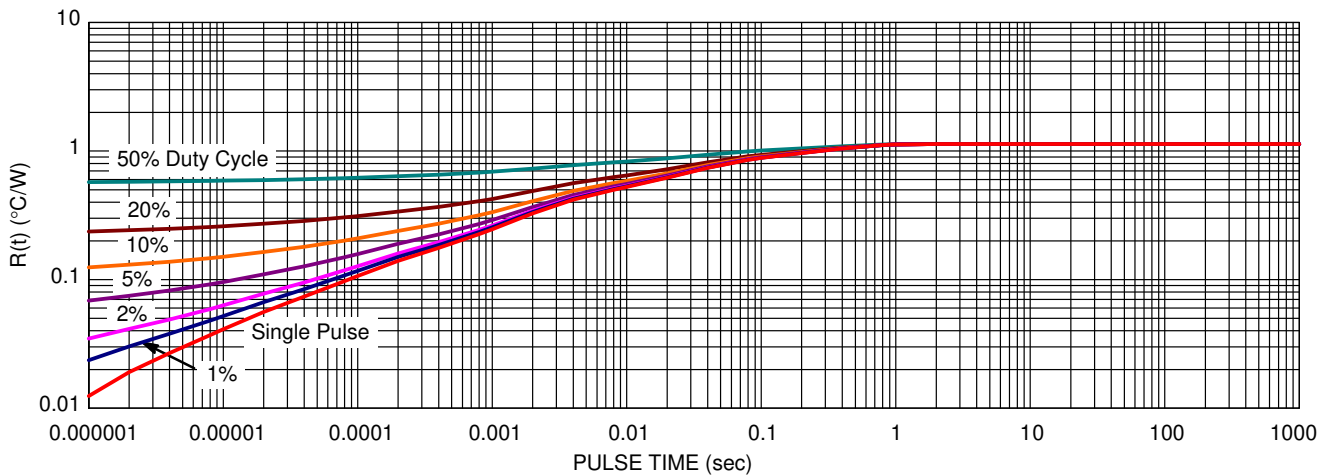
Figure 9. Typical Transient Thermal Response Characteristics, Junction−to−Case

NTS12100EMFS, NRVTS12100EMFS

PACKAGE DIMENSIONS

DFN5 5x6, 1.27P
(SO–8FL)
CASE 488AA
ISSUE L

TOP VIEW

SIDE VIEW

DETAIL A

DETAIL A

SEATING PLANE

BOTTOM VIEW

PIN 5
(EXPOSED PAD)

RECOMMENDED SOLDERING FOOTPRINT*

DIMENSIONS: MILLIMETERS
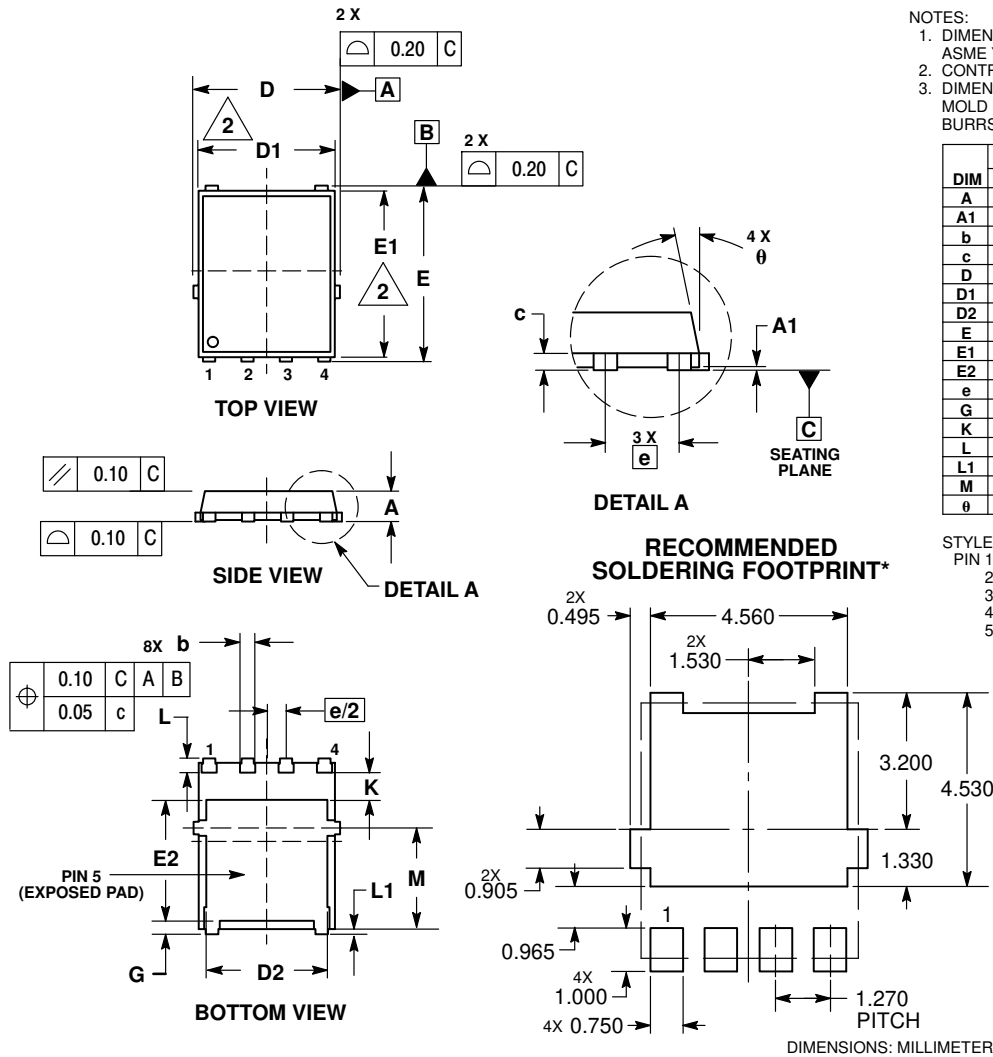
NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETER.
3. DIMENSION D1 AND E1 DO NOT INCLUDE MOLD FLASH PROTRUSIONS OR GATE BURRS.

DIM	MILLIMETERS		
	MIN	NOM	MAX
A	0.90	1.00	1.10
A1	0.00	–––	0.05
b	0.33	0.41	0.51
c	0.23	0.28	0.33
D	5.00	5.15	5.30
D1	4.70	4.90	5.10
D2	3.80	4.00	4.20
E	6.00	6.15	6.30
E1	5.70	5.90	6.10
E2	3.45	3.65	3.85
e	1.27 BSC		
G	0.51	0.61	0.71
K	1.20	1.35	1.50
L	0.51	0.61	0.71
L1	0.125 REF		
M	3.00	3.40	3.80
θ	0 °	–––	12 °

STYLE 2:
PIN 1. ANODE
2. ANODE
3. ANODE
4. NO CONNECT
5. CATHODE

*For additional information on our Pb–Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.