UMW STTH12R06G-TR

FRED Ultrafast Soft Recovery Diode, 600V, 15A

1.Description

These diodes are optimized to less losses and EMI/RFI in high frequency power conditioning system. The soft recovery character of the diodes offers buffer in most applications. These devices are suited for power converters and other applications where the switching losses are not significant portion of the total losses.

2.Features

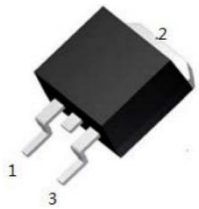
- Ultrafast Recovery
- 175°C operating junction temperature
- High frequency operation
- Low IR value
- High surge capacity
- Epitaxial chip construction

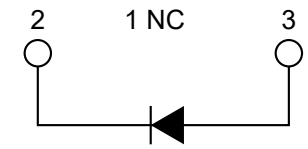
3.Applications

- Switched mode power supply
- UPS
- Free wheeling diode, Snubber diode

4.Pinning Information

Product Summary	
V_R	600V
$I_{F(AV)}$	15A
t_{rr}	25ns





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5.Absolute Maximum Ratings

Parameter	Symbol	Test Conditions	Value	Units
Repetitive peak reverse voltage	V_{RRM}		600	V
Blocking voltage	V_R		600	V
Continuous forward current [1]	$I_{F(AV)}$	T_A=110°C	15	A
Single pulse forward current [2]	I_{FSM}	T_A=25°C	130	A
Maximum repetitive forward current	I_{FRM}	Square wave, 20kHZ	35	A
Operating junction	T_J		175	°C
Storage temperatures	T_{STG}		-55 to 175	°C

Note: 1. δ=0.5

2. t_p=10ms sinusoidal

6.Electrical Characteristics (T_A= 25°C Unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Breakdown voltage	V_{BR}	I_R=100μA	600			V
Forward voltage	V_F	I_F=15A		2	2.6	V
		I_F=15A, T_J=125°C		1.7	2.4	V
Reverse leakage current	I_R	V_R=V_{RRM}			20	μA
		T_J=150°C, V_R=600V			200	μA
Reverse recovery time	t_{rr}	I_F=0.5A, I_R=1A, I_{RR}=0.25A			30	ns
		I_F=1A, V_R=30V, di/dt =200A/μs		18	25	ns

Notes: To evaluate the conduction losses, use the following equation: $P = 1.16 \times I_{F(AV)} + 0.053\ I_{F^2(RMS)}$

7.Thermal Characteristics

Parameter	Symbol	Typ	Max	Units
Junction-to-Case	R_{thJC}		3	°C/W

8.Typical Characterisitics

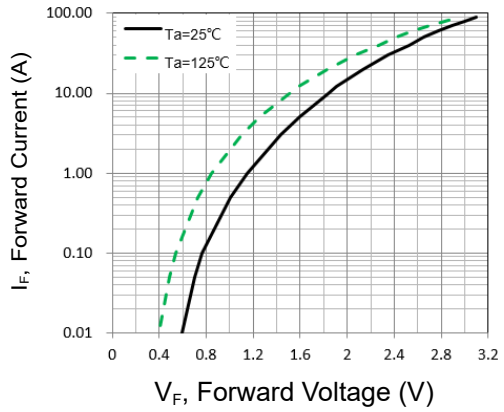


Figure 1: Forward Characteristic (typ.)

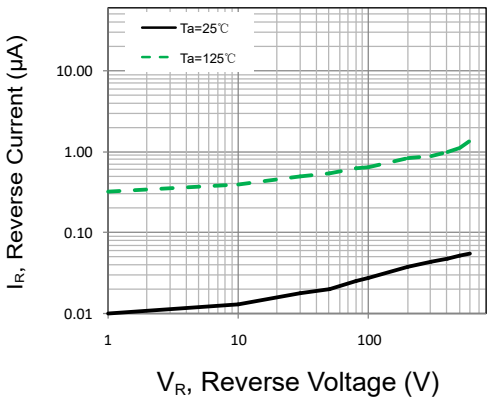
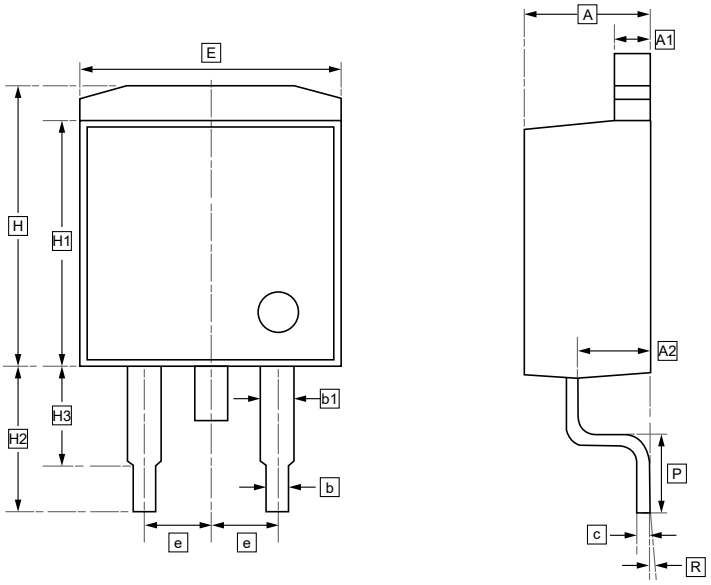


Figure 2: Reverse Characteristic (typ.)

9.TO-263 Package Outline Dimensions

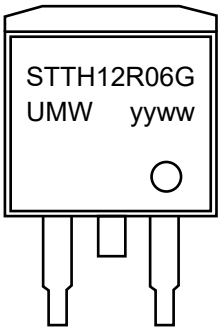


DIMENSIONS (mm are the original dimensions)

Symbol	A	A1	A2	b	b1	c	e	E	H	H1	H2	H3
Min	4.50	1.17	2.40	0.60	0.95	0.26	2.34	9.70	9.80	8.50	5.05	3.60
Max	4.90	1.37	2.80	1.00	1.35	0.50	2.74	10.10	10.20	8.90	5.45	4.00

Symbol	R	P
Min	0°	2.55
Max	6°	2.95

10.Ordering Information



yy: Year Code
ww: Week Code

Order Code	Package	Base QTY	Delivery Mode
UMW STTH12R06G-TR	TO-263	800	Tape and reel

11.Disclaimer

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