UMW STTH10LCD06FP

FRED Ultrafast Soft Recovery Diode, 650V, 12A

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

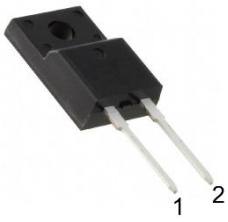
- Ultrafast Recovery
- 175°C operating junction temperature
- High frequency operation
- Low IR value
- High surge capacity
- Epitaxial chip construction

3.Applications

- Switched mode power supply
- UPS
- Freewheeling diode, Snubber diode

4.Pinning Information

Product Summary	
V_R	650V
$I_{F(AV)}$	12A
t_{rr}	25ns



TO-220F-2

5.Absolute Maximum Ratings

Parameter	Symbol	Test Conditions	Value	Units
Repetitive peak reverse voltage	V_{RRM}		650	V
Blocking voltage	V_R		650	V
Continuous forward current [1]	$I_{F(AV)}$	T_A=110°C	12	A
Single pulse forward current [2]	I_{FSM}	T_A=25°C	90	A
Maximum repetitive forward current	I_{FRM}	Square wave, 20kHZ	24	A
Operating junction	T_J		175	°C
Storage temperatures	T_{STG}		-55 to 175	°C

Note: 1. δ = 0.5, square wave

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	650			V
Forward voltage	V_F[3]	I_F=12A		1.95	2.7	V
		I_F=12A, T_J=125°C		1.8	2.5	V
Reverse leakage current	I_R[4]	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:

3. Pulse test: t_p=380μs, δ < 2%

4. Pulse test: t_p=5ms, δ < 2%

To evaluate the conduction losses, use the following equation: $P = 1.2 \times I_{F(AV)} + 0.040 \times I_{F^2(RMS)}$

7.Thermal Characteristics

Parameter	Symbol	Typ	Max	Units
Junction-to-Case	R_{thJC}		4.2	°C/W

8.Typical Characterisitics

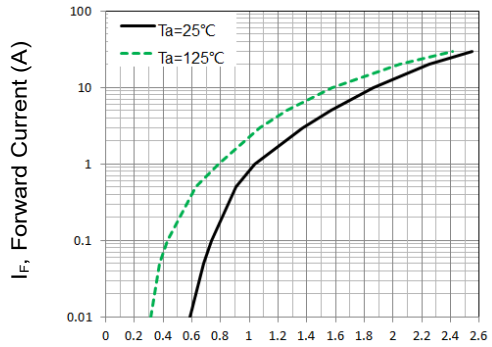


Figure 1: Forward Characteristic (typ.)

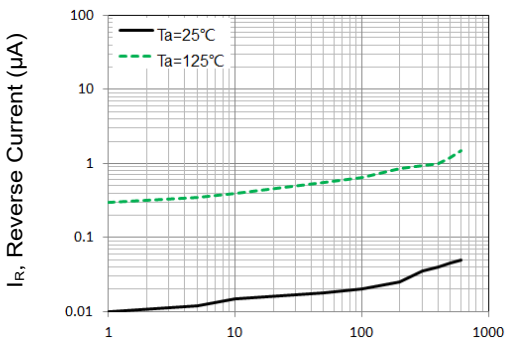
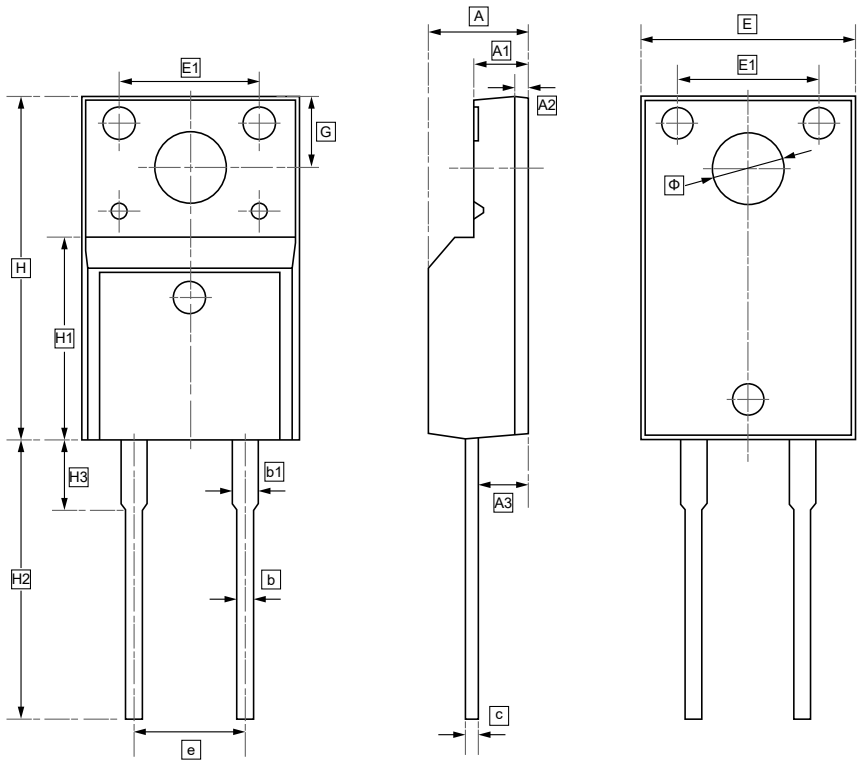


Figure 2: Reverse Characteristic (typ.)

9.TO-220F-2 Package Outline Dimensions

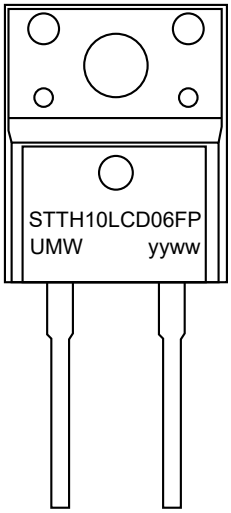


DIMENSIONS (mm are the original dimensions)

Symbol	A	A1	A2	A3	b	b1	c	e	E	E1	H	H1
Min	4.35	2.30	0.40	2.10	0.60	1.00	0.30	4.60	9.90	6.80	15.60	8.80
Max	4.85	2.70	0.80	2.50	1.00	1.40	0.70	5.40	10.30	7.20	16.00	9.20

Symbol	H2	H3	G	Φ
Min	12.5	2.90	3.10	3.10
Max	13.9	3.30	3.50	3.50

10.Ordering Information



yy: Year Code
ww: Week Code

Order Code	Package	Base QTY	Delivery Mode
UMW STTH10LCD06FP	TO-220F-2	1000	Tube and box

11.Disclaimer

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