Super Fast Rectifiers USF1260F

FEATURES

- Ultrafast switching.
- Low reverse recovery current.
- Low thermal resistance.
- Reduces switching losses.

Lead-free

ITO-220AC

MAXIMUM RATING operating temperature range applies unless otherwise specified

Symbol	Parameter	Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage	600	V
V_{RMS}	RMS Voltage	420	V
V_{DC}	DC Blocking Voltage	600	V
$I_{F(AV)}$	Average Forward Rectified Current T_C=50℃	12	A
$I_{F(RMS)}$	Forward rms current	30	A
I_{FSM}	Surge non repetitive forward current	100	A
$R_{\theta JC}$	Junction to Case	1.7	℃/W
T_j T_{stg}	Operating Junction and StorageTemperature Range	-65 to +175	℃

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ELECTRICAL CHARACTERISTICS@ Ta=25℃ unless otherwise specified

Parameter	Symbol	Test conditions	Typ	MAX	UNIT
Reverse Current	I_R	$V_R=V_{RRM}$,T_A=25℃ $V_R=V_{RRM}$,T_A=125℃	- 50	45 600	μA
Forward Voltage	V_F	I_F=12A ,T_A=25℃ I_F=12A ,T_A=125℃	- 1.4	2.9 1.8	V
Reverse Recovery Time	t_{rr}	I_F=0.5A,I_R=1A, I_{rr}=0.25A I_F=1A,dI_F/dt=-50A/us,V_R=30V		25 45	ns
Reversr Recovery Current	I_{RM}	I_F=12A, V_R=400V, dI_F/dt=-200A/us T_A=125℃	7.0	8.4	A
Softness Factor	S factor		0.2		
Reverse recovery charges	Q_{rr}		180		nC
Forward Recovery Time	t_{fr}	I_F=12A, V_{FR}=1.1*V_{Fmax}, dI_F/dt=96A/us T_A=25℃		200	ns
Forward Recovery Voltage	V_{FP}			5.5	V

TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

Figure 1. Conduction losses versus average current

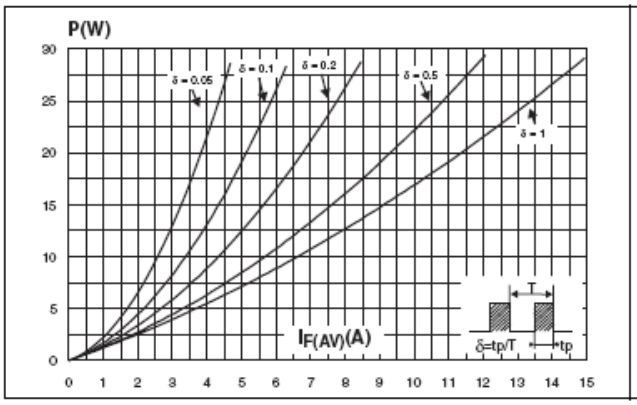

Figure 2. Forward voltage drop versus forward current

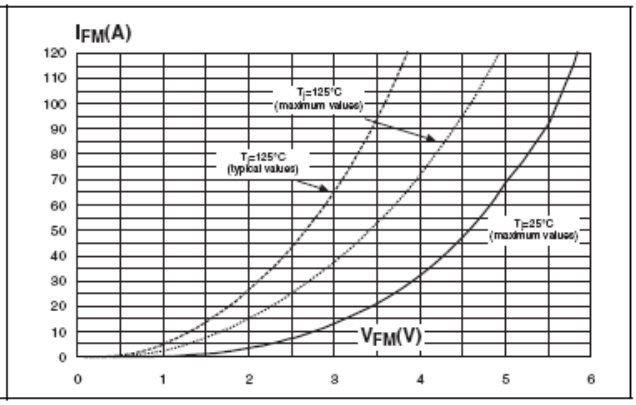

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Figure 3. Relative variation of thermal impedance junction to case versus pulse duration

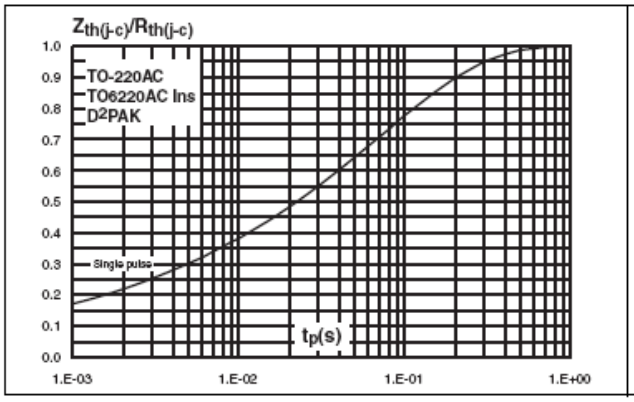

Figure 4. Relative variation of thermal impedance junction to case versus pulse duration

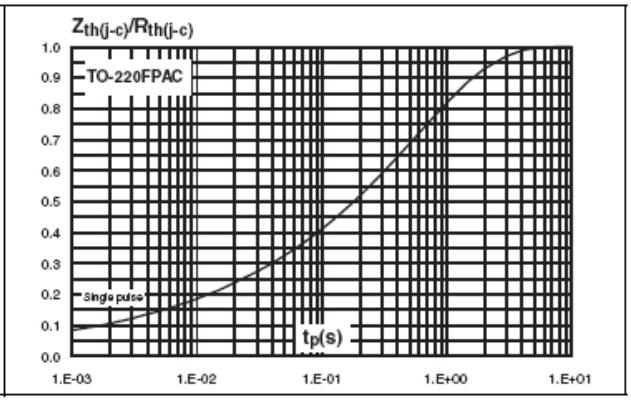

Figure 5. Peak reverse recovery current versus dI_F/dt (typical values)

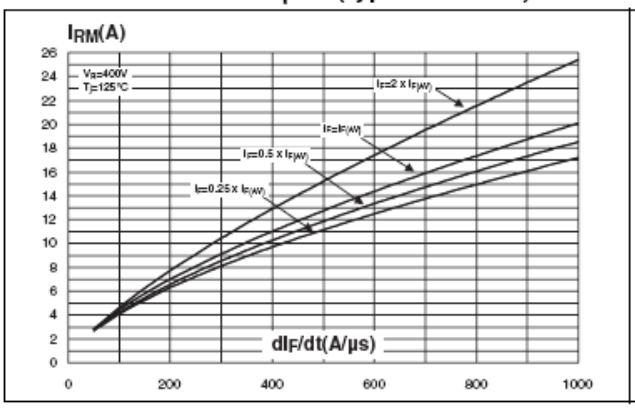

Figure 6. Reverse recovery time versus dI_F/dt (typical values)

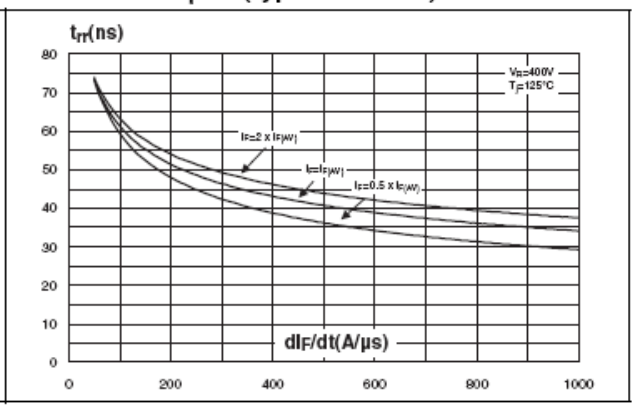

Figure 7. Reverse recovery charges versus dI_F/dt (typical values)

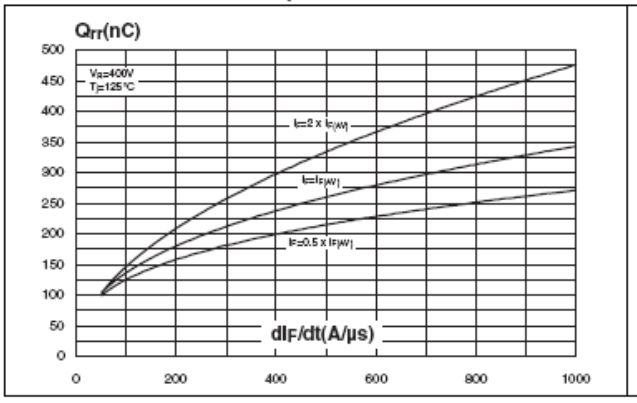

Figure 8. Softness factor versus dI_F/dt (typical values)

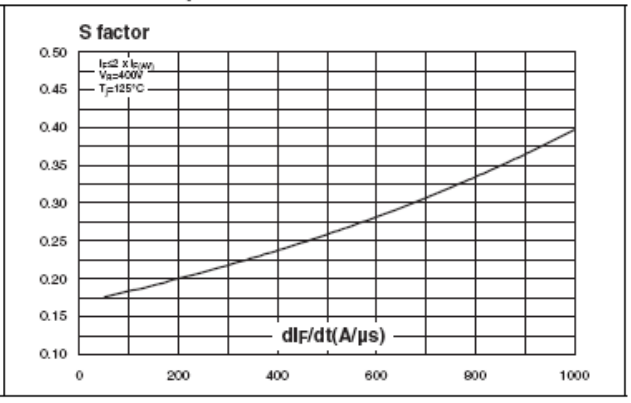

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Figure 9. Relative variations of dynamic parameters versus junction temperature

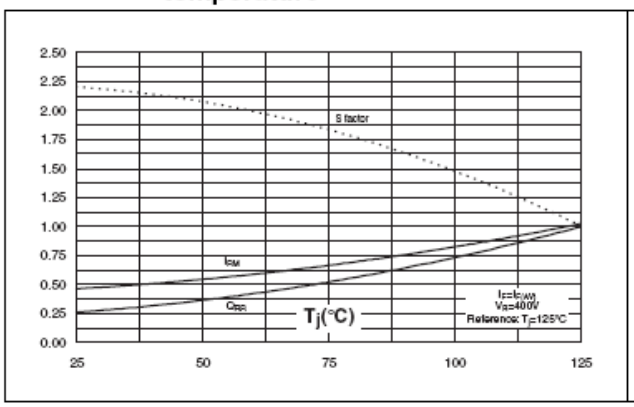


Figure 10. Transient peak forward voltage versus dI_F/dt (typical values)

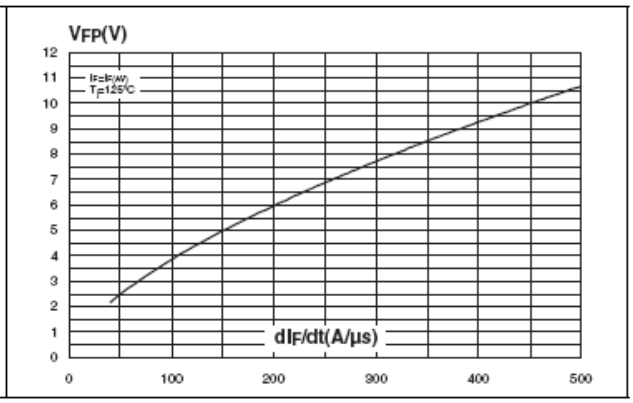


Figure 11. Forward recovery time versus dI_F/dt (typical values)

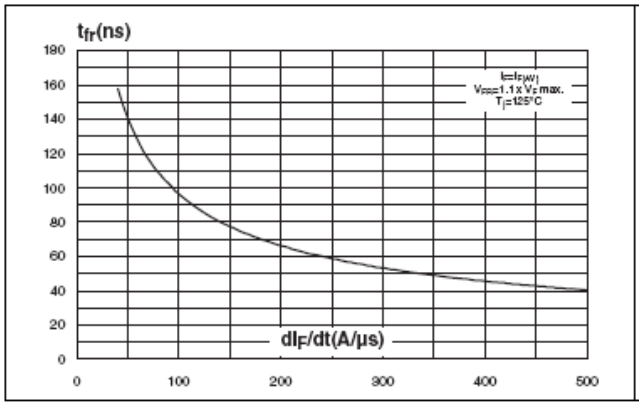


Figure 12. Junction capacitance versus reverse voltage applied (typical values)

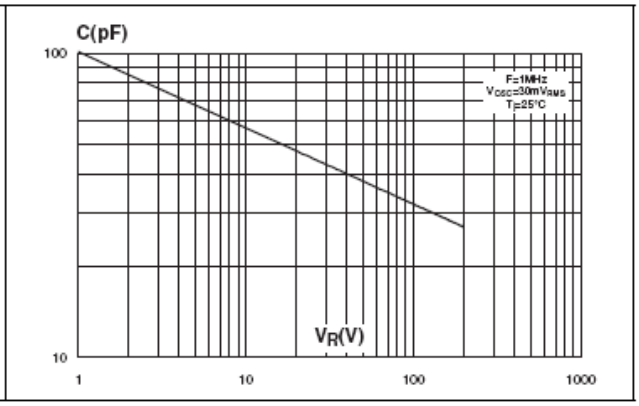
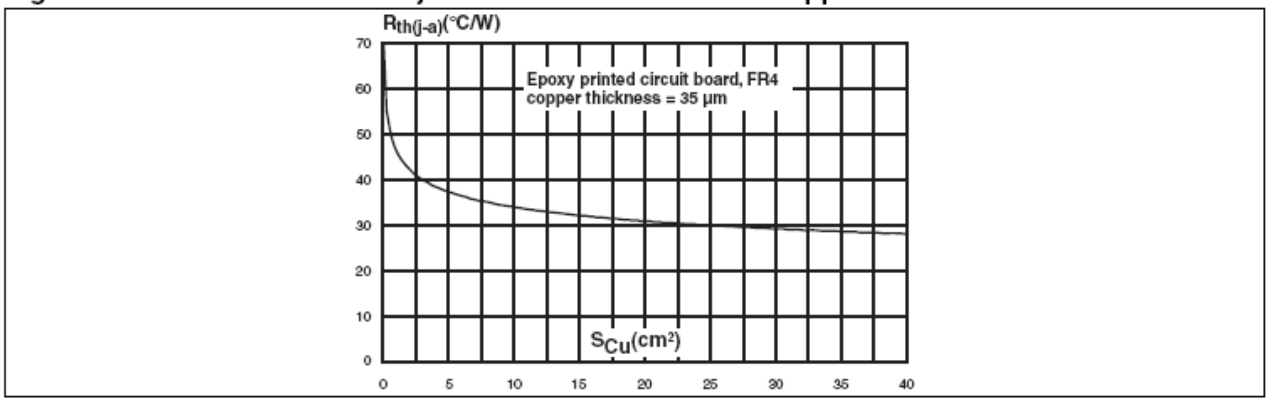


Figure 13. Thermal resistance junction to ambient versus copper surface under tab



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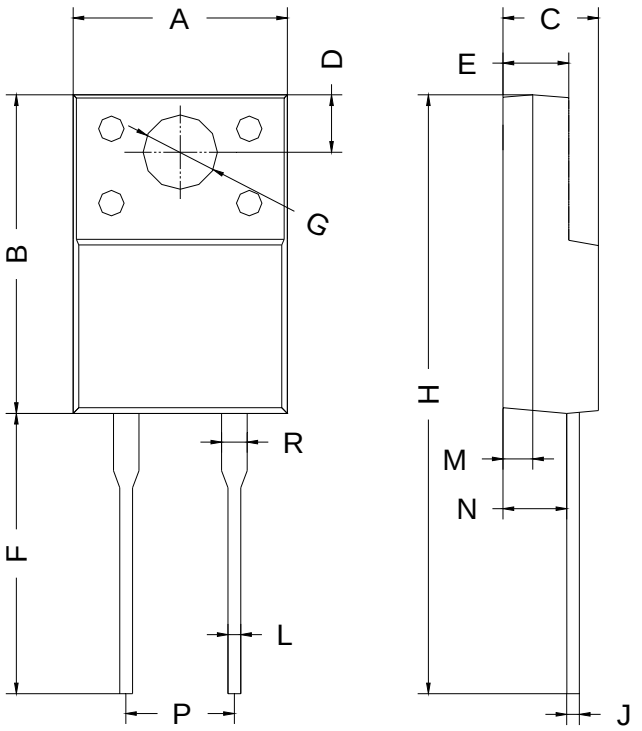
PACKAGE OUTLINE

Plastic surface mounted package ITO-220AC



ITO-220AC		
Dim	Min	Max
A	9.90	10.30
B	14.80	15.20
C	4.50 Typical	
D	2.70 Typical	
E	2.80	3.20
F	13.00	13.40
G	3.2 Typical	
H	28.00	28.40
J	0.60 Typical	
L	0.50	0.75
M	1.40 Typical	
N	2.90	3.10
P	5.00	5.20
R	1.20 Typical	
All Dimensions in mm		