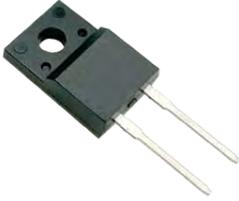


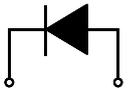
# HUR1560F

Soft Recovery Behaviour High-Performance Wide Temperature Range Ultra Fast Recovery Epitaxial Diodes

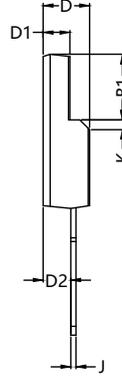
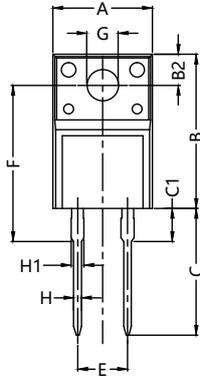
Dimensions in mm: ITO-220AC (TO-220F-2L)



1.Cathode 2. Anode



1.Cathode 2. Anode



Dim.	Millimeter		Dim.	Millimeter	
	Min.	Max.		Min.	Max.
A	9.80	10.60	D2	2.30	3.30
B	15.40	16.40	E	5.08BSC	
B1	6.00	7.40	F	14.50	16.00
B2	3.20	3.80	ØG	2.90	3.40
C	12.80	13.50	H	0.60	1.00
C1	3.20	4.00	H1	1.15	1.55
D	4.35	4.95	J	0.35	0.65
D1	2.24	2.84	K	0.00	1.60



	$V_{RSM}$ V	$V_{RRM}$ V
<b>HUR1560F</b>	600	600

Symbol	Test Conditions	Maximum Ratings	Unit
$I_{FRMS}$ $I_{FAVM}$	$T_C=140^{\circ}C$ ; rectangular, $d=0.5$	35 15	A
$I_{FSM}$	$T_{VJ}=45^{\circ}C$ ; $t_p=10ms$ (50Hz), sine	150	A
$E_{AS}$	$T_{VJ}=25^{\circ}C$ ; non-repetitive; $I_{AS}=1A$ ; $L=180\mu H$	0.1	mJ
$I_{AR}$	$V_A=1.5 \cdot V_R$ typ.; $f=10kHz$ ; repetitive	0.1	A
$T_{VJ}$ $T_{VJM}$ $T_{stg}$		-55...+175 175 -55...+150	$^{\circ}C$
$P_{tot}$	$T_C=25^{\circ}C$	95	W
$M_d$	mounting torque	0.4...0.6	Nm
$V_{ISO}$	1min	>2500	Vac
Weight		2	g

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Symbol	Test Conditions	Characteristic Values		Unit
		typ.	max.	
I <sub>R</sub>	T <sub>VJ</sub> =25°C; V <sub>R</sub> =V <sub>RRM</sub> T <sub>VJ</sub> =150°C; V <sub>R</sub> =V <sub>RRM</sub>		10	uA
			0.5	mA
V <sub>F</sub>	I <sub>F</sub> =15A; T <sub>VJ</sub> =150°C T <sub>VJ</sub> =25°C	1.15 1.30	1.25 1.55	V
R <sub>thJC</sub> R <sub>thCH</sub>		0.5	3.4	K/W
t <sub>tr</sub>	I <sub>F</sub> =1A; -di/dt=100A/us; V <sub>R</sub> =30V; T <sub>VJ</sub> =25°C	27		ns
I <sub>RM</sub>	V <sub>R</sub> =100V; I <sub>F</sub> =25A; -di <sub>F</sub> /dt=100A/us; T <sub>VJ</sub> =100°C		4.9	A

## FEATURES

- \* International standard package ITO-220AC (TO-220F-2L)
- \* Planar passivated chips
- \* Very short recovery time
- \* Extremely low switching losses
- \* Low I<sub>RM</sub>-values
- \* Soft recovery behaviour
- \* RoHS compliant

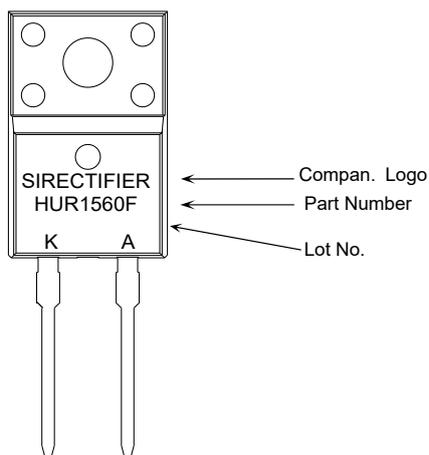
## APPLICATIONS

- \* Antiparallel diode for high frequency switching devices
- \* Antisaturation diode
- \* Snubber diode
- \* Free wheeling diode in converters and motor control circuits
- \* Rectifiers in switch mode power supplies (SMPS)
- \* Inductive heating
- \* Uninterruptible power supplies (UPS)
- \* Ultrasonic cleaners and welders

## ADVANTAGES

- \* Avalanche voltage rated for reliable operation
- \* Soft reverse recovery for low EMI/RFI
- \* Low I<sub>RM</sub> reduces:
  - Power dissipation within the diode
  - Turn-on loss in the commutating switch

## MARKING



## ORDERING INFORMATION

Part Number	Package	Shipping	Marking Code
HUR1560F	TO-220F-2L	50pcs / Tube	HUR1560F

**Sirectifier**<sup>®</sup>

# HUR1560F

Soft Recovery Behaviour High-Performance Wide Temperature Range Ultra Fast Recovery Epitaxial Diodes

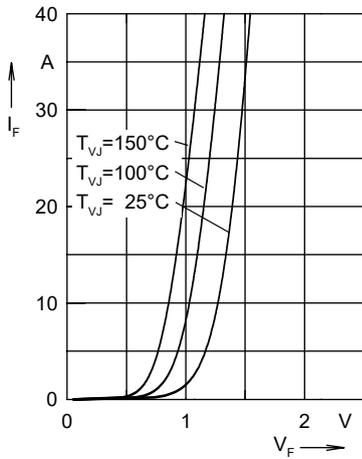


Fig. 1 Forward current  $I_F$  versus  $V_F$

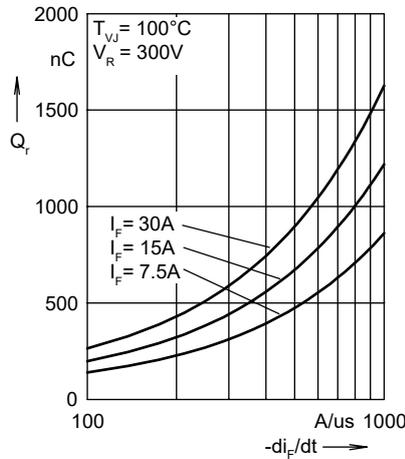


Fig. 2 Reverse recovery charge  $Q_r$  versus  $-di_F/dt$

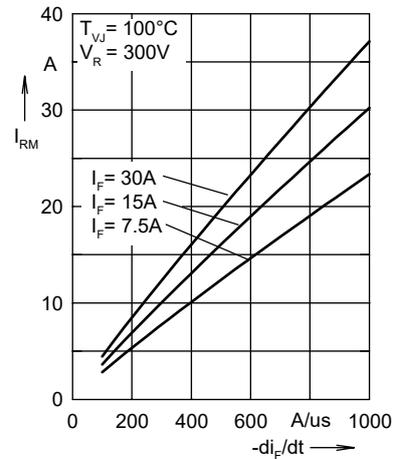


Fig. 3 Peak reverse current  $I_{RM}$  versus  $-di_F/dt$

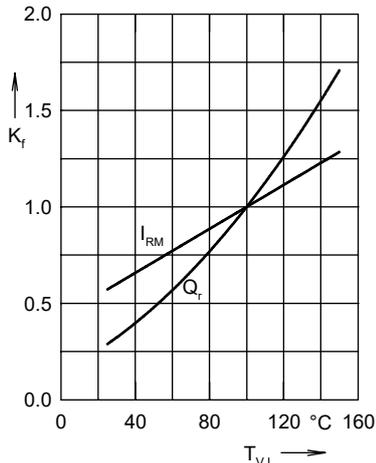


Fig. 4 Dynamic parameters  $Q_r$ ,  $I_{RM}$  versus  $T_{VJ}$

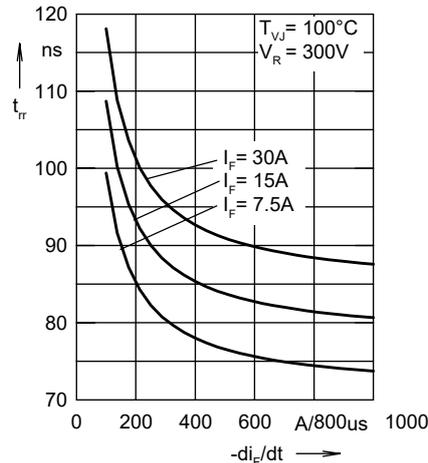


Fig. 5 Recovery time  $t_{tr}$  versus  $-di_F/dt$

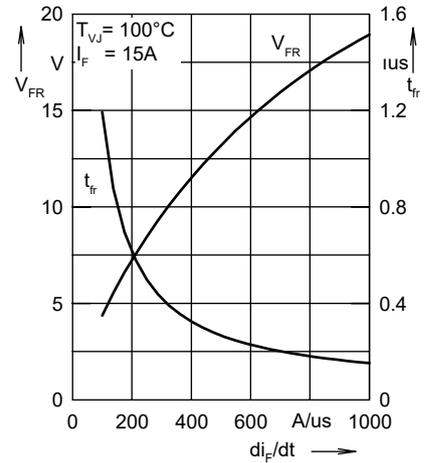


Fig. 6 Peak forward voltage  $V_{FR}$  and  $t_{tr}$  versus  $di_F/dt$

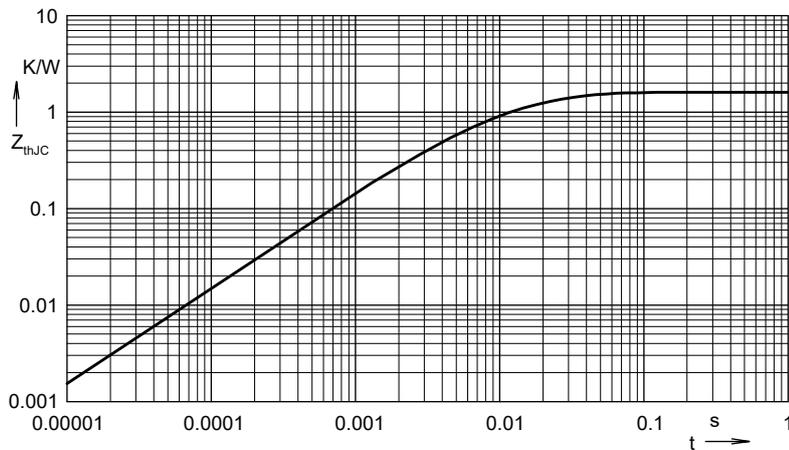


Fig. 7 Transient thermal resistance junction to case

Constants for  $Z_{thJC}$  calculation:

i	$R_{thi}$ (K/W)	$t_i$ (s)
1	0.908	0.0052
2	0.35	0.0003
3	0.342	0.017

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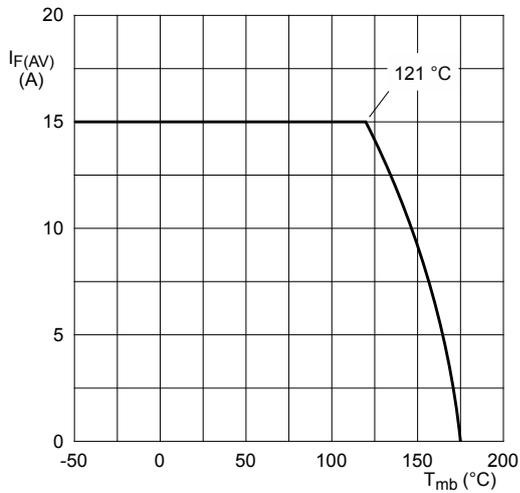


Fig. 8. Forward current as a function of mounting base temperature; maximum values

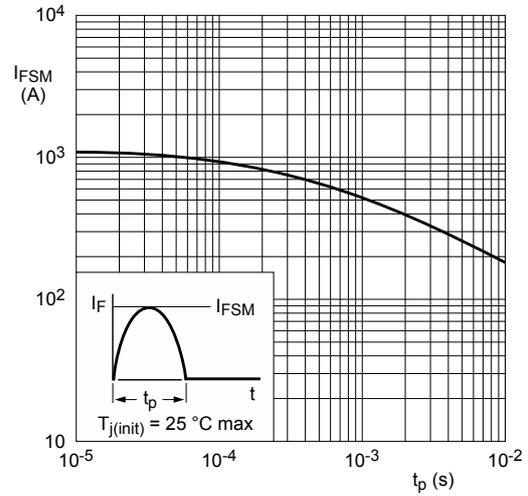


Fig. 9. Non-repetitive peak forward current as a function of pulse width; sinusoidal waveform; maximum values

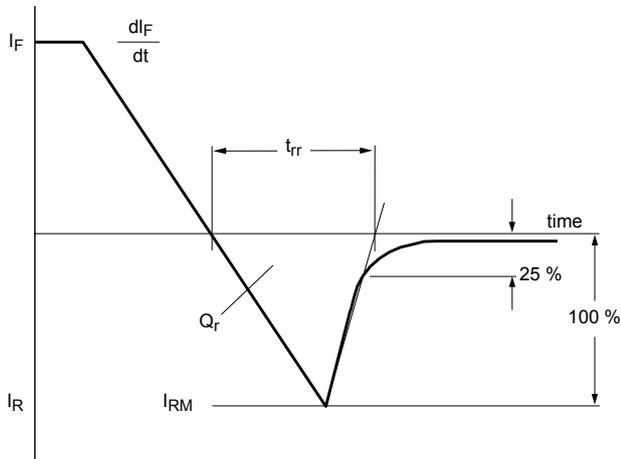


Fig. 10. Reverse recovery definitions; ramp recovery