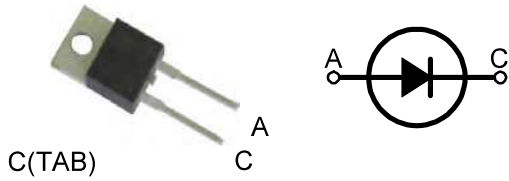


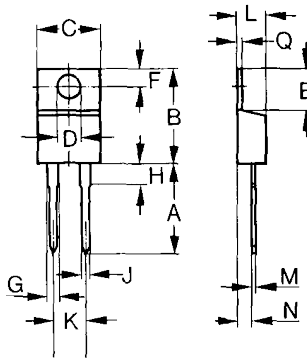
HUR15100, HUR15120

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



A=Anode, C=Cathode, TAB=Cathode

Dimensions TO-220AC



Dim.	Inches		Milimeter	
	Min.	Max.	Min.	Max.
A	0.500	0.580	12.70	14.73
B	0.560	0.650	14.23	16.51
C	0.380	0.420	9.66	10.66
D	0.139	0.161	3.54	4.08
E	2.300	0.420	5.85	6.85
F	0.100	0.135	2.54	3.42
G	0.045	0.070	1.15	1.77
H	-	0.250	-	6.35
J	0.025	0.035	0.64	0.89
K	0.190	0.210	4.83	5.33
L	0.140	0.190	3.56	4.82
M	0.015	0.022	0.38	0.56
N	0.080	0.115	2.04	2.49
Q	0.025	0.055	0.64	1.39

	V_{RSM} V	V_{RRM} V
HUR15100	1000	1000
HUR15120	1200	1200

Symbol	Test Conditions	Maximum Ratings	Unit
I_{FRMS} I_{FAVM}	$T_C=125^{\circ}C$; rectangular, $d=0.5$	35 15	A
I_{FSM}	$T_{VJ}=45^{\circ}C$; $t_p=10ms$ (50Hz), sine	90	A
E_{AS}	$T_{VJ}=25^{\circ}C$; non-repetitive; $I_{AS}=9A$; $L=180\mu H$	8.7	mJ
I_{AR}	$V_A=1.25 \cdot V_R$ typ.; $f=10kHz$; repetitive	0.9	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
Weight	typical	2	g

HUR15100, HUR15120

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Symbol	Test Conditions	Characteristic Values		Unit
		typ.	max.	
I_R	$T_{VJ}=25^{\circ}\text{C}; V_R=V_{RRM}$ $T_{VJ}=150^{\circ}\text{C}; V_R=V_{RRM}$		100	μA
			0.5	mA
V_F	$I_F=15\text{A}; T_{VJ}=150^{\circ}\text{C}$ $T_{VJ}=25^{\circ}\text{C}$		1.79	V
			2.75	
R_{thJC} R_{thCH}		0.5	1.6	K/W
t_{rr}	$I_F=1\text{A}; -di/dt=100\text{A}/\mu\text{s}; V_R=30\text{V}; T_{VJ}=25^{\circ}\text{C}$	40		ns
I_{RM}	$V_R=100\text{V}; I_F=25\text{A}; -di_F/dt=100\text{A}/\mu\text{s}; T_{VJ}=100^{\circ}\text{C}$	4.5		A

FEATURES

- * International standard package
- * Glass passivated chips
- * Very short recovery time
- * Extremely low switching losses
- * Low I_{RM} -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_{RM} reduces:
 - Power dissipation within the diode
 - Turn-on loss in the commutating switch

HUR15100, HUR15120

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

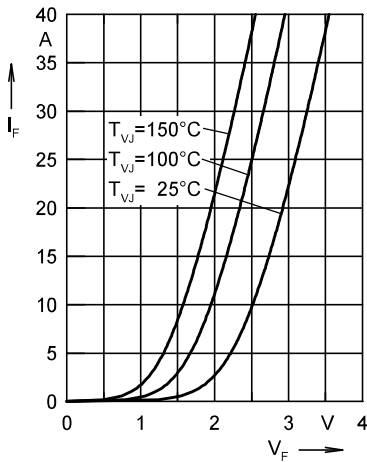


Fig. 1 Forward current I_F versus V_F

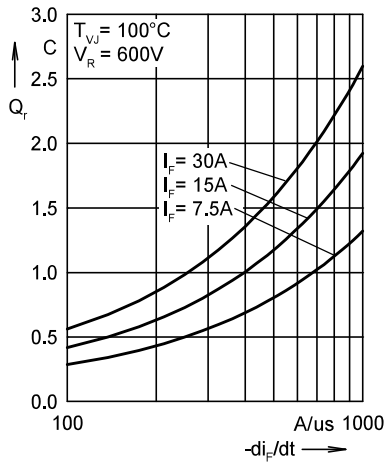


Fig. 2 Reverse recovery charge Q_r versus $-di_F/dt$

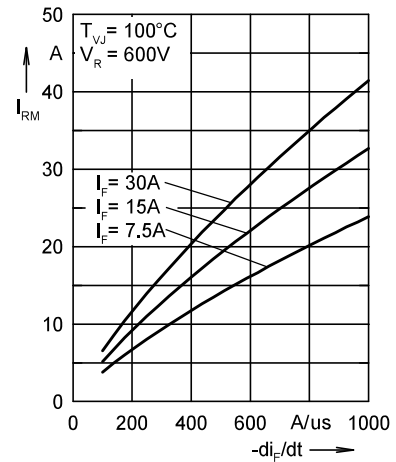


Fig. 3 Peak reverse current I_{RM} versus $-di_F/dt$

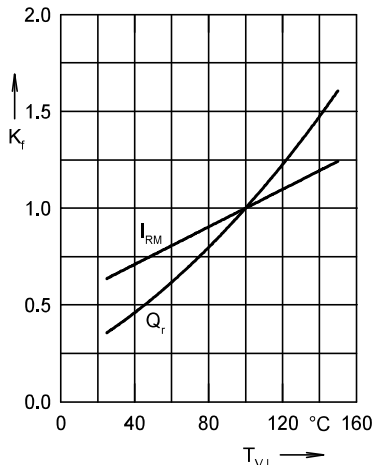


Fig. 4 Dynamic parameters Q_r , I_{RM} versus T_{VJ}

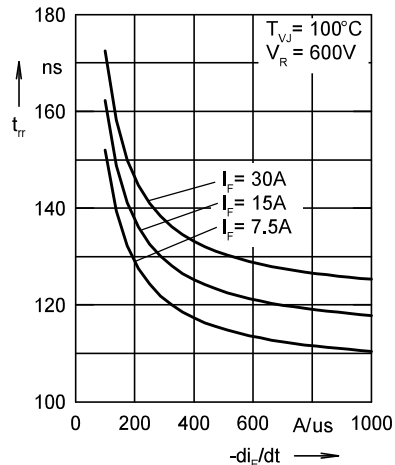


Fig. 5 Recovery time t_{tr} versus $-di_F/dt$

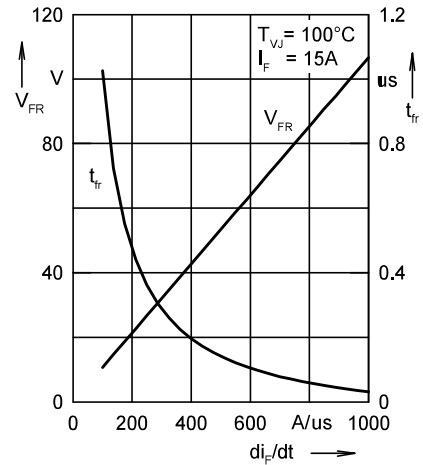


Fig. 6 Peak forward voltage V_{FR} and t_{tr} versus di_F/dt

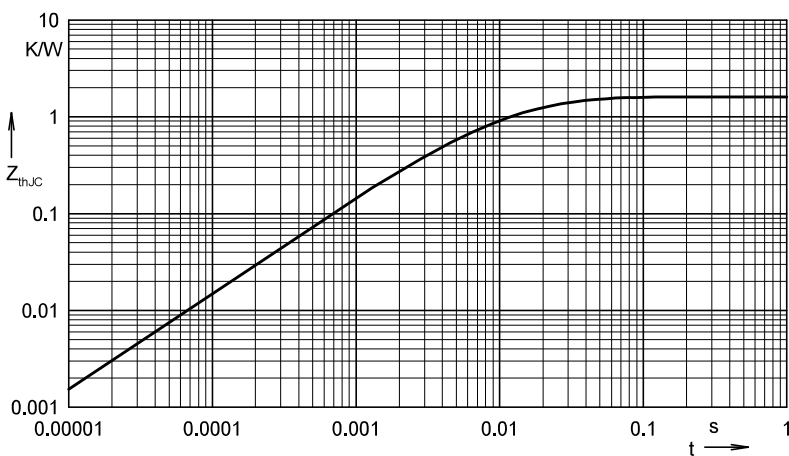


Fig. 7 Transient thermal resistance junction to case

Constants for Z_{thJC} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.9084	0.0052
2	0.3497	0.0003
3	0.3419	0.0165