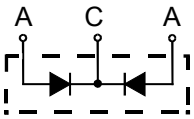
HUR1630CT

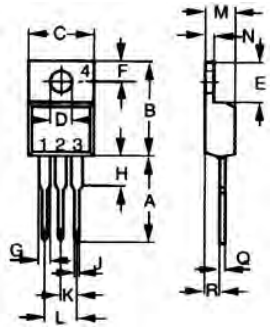
Soft Recovery Behaviour High-Performance Wide Temperature Range Ultra Fast Recovery Epitaxial Diodes



A=Anode, C=Cathode, TAB=Cathode

	V_{RSM} V	V_{RRM} V
HUR1630CT	300	300

Dimensions TO-220AB



Dim.	Inches Min.	Inches Max.	Milimeter Min.	Milimeter Max.
A	0.500	0.550	12.70	13.97
B	0.580	0.630	14.73	16.00
C	0.390	0.420	9.91	10.66
D	0.139	0.161	3.54	4.08
E	0.230	0.270	5.85	6.85
F	0.100	0.125	2.54	3.18
G	0.045	0.065	1.15	1.65
H	0.110	0.230	2.79	5.84
J	0.025	0.040	0.64	1.01
K	0.100	BSC	2.54	BSC
M	0.170	0.190	4.32	4.82
N	0.045	0.055	1.14	1.39
Q	0.014	0.022	0.35	0.56
R	0.090	0.110	2.29	2.79

Symbol	Test Conditions	Maximum Ratings	Unit
I_{FRMS} I_{FAVM}	T_C=130°C; rectangular, d=0.5	35 2 x 8	A
I_{FSM}	T_{VJ}=45°C; t_p=10ms (50Hz), sine	60	A
E_{AS}	T_{VJ}=25°C; non-repetitive; I_{AS}=2A; L=180uH	0.5	mJ
I_{AR}	V_A=1.5·V_R typ.; f=10kHz; repetitive	0.2	A
T_{VJ} T_{VJM} T_{stg}		-55...+175 175 -55...+150	°C
P_{tot}	T_C=25°C	60	W
M_d	mounting torque	0.4...0.6	Nm
Weight	typical	2	g

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Symbol	Test Conditions	Characteristic Values typ.	max.	Unit
I_R	T_{VJ}=25°C; V_R=V_{RRM} T_{VJ}=150°C; V_R=V_{RRM}		60 0.25	uA mA
V_F	I_F=10A; T_{VJ}=150°C T_{VJ}=25°C		1.29 1.75	V
R_{thJC} R_{thCH}		0.5	2.5	K/W
t_{rr}	I_F=1A; -di/dt=50A/us; V_R=30V; T_{VJ}=25°C	30		ns
I_{RM}	V_R=100V; I_F=12A; -di$_F$/dt=100A/us; T_{VJ}=100°C		2.4	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

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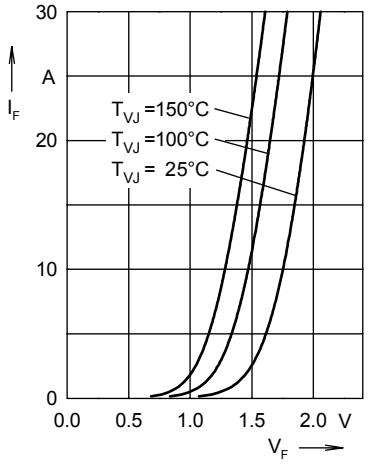

Fig. 1 Forward current I_F versus V_F

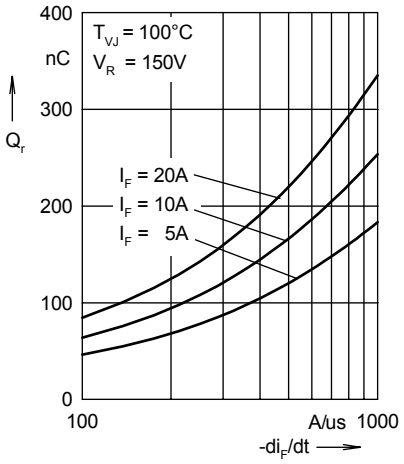

Fig. 2 Reverse recovery charge Q_r versus $-di_F/dt$

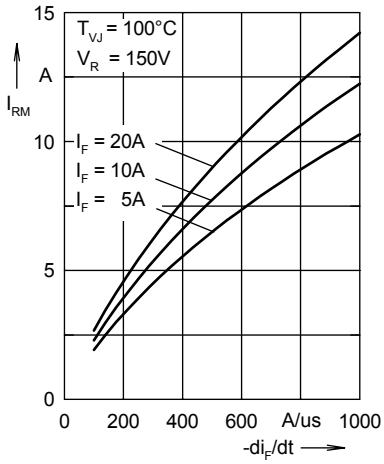

Fig. 3 Peak reverse current I_{RM} versus $-di_F/dt$

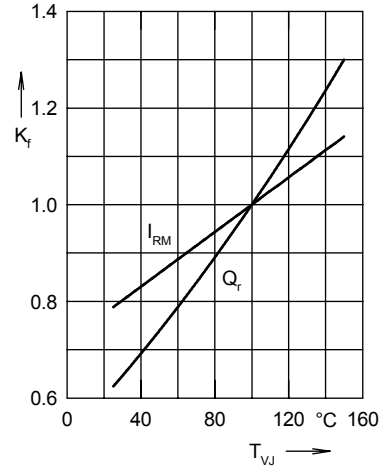

Fig. 4 Dynamic parameters Q_r, I_{RM} versus T_{VJ}

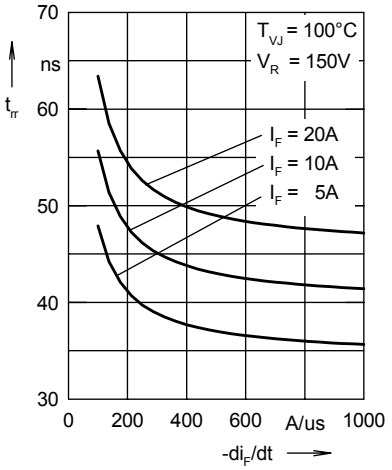

Fig. 5 Recovery time t_{rr} versus $-di_F/dt$

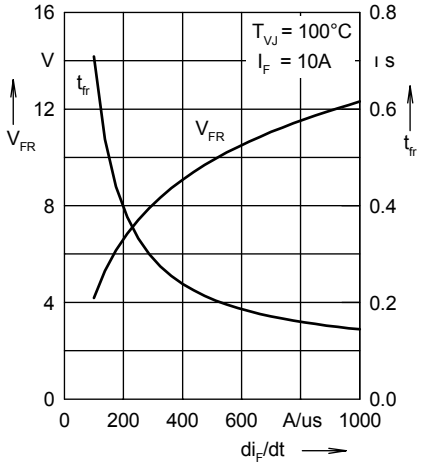

Fig. 6 Peak forward voltage V_{FR} and t_{fr} versus di_F/dt

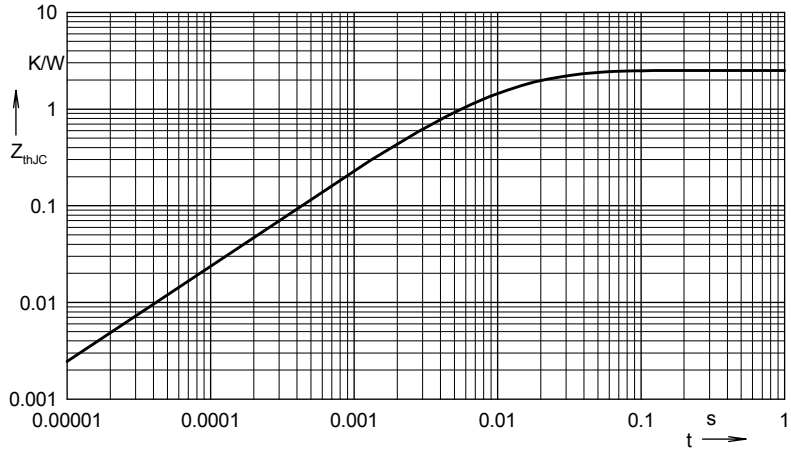

Fig. 7 Transient thermal resistance junction to case

Constants for Z_{thJC} calculation:

i	R_{thi} (K/W)	t_i (s)
1	1.449	0.005
2	0.558	0.0003
3	0.493	0.017

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