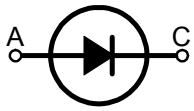
HUR1520S, HUR1530S

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

C(TAB)

A

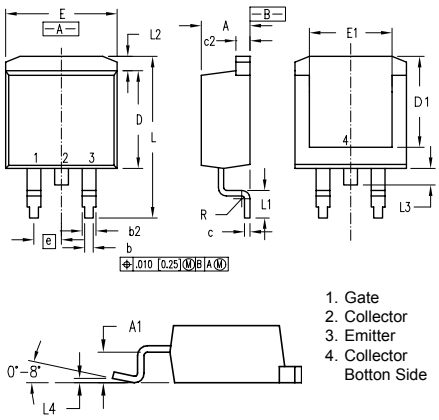
NC



A=Anode, NC= No connection, TAB=Cathode

	V_{RSM}	V_{RRM}
	V	V
HUR1520S	200	200
HUR1530S	300	300

Dimensions TO-263(D^2PAK)



1. Gate
2. Collector
3. Emitter
4. Collector Botton Side

Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.06	4.83	.160	.190
A1	2.03	2.79	.080	.110
b	0.51	0.99	.020	.039
b2	1.14	1.40	.045	.055
c	0.46	0.74	.018	.029
c2	1.14	1.40	.045	.055
D	8.64	9.65	.340	.380
D1	8.00	8.89	.315	.350
E	9.65	10.29	.380	.405
E1	6.22	8.13	.245	.320
e	2.54 BSC		.100 BSC	
L	14.61	15.88	.575	.625
L1	2.29	2.79	.090	.110
L2	1.02	1.40	.040	.055
L3	1.27	1.78	.050	.070
L4	0	0.20	0	.008
R	0.46	0.74	.018	.029

Symbol	Test Conditions	Maximum Ratings	Unit
I_{FRMS} I_{FAVM}	T_C=135°C; rectangular, d=0.5	35 15	A
I_{FSM}	T_{VJ}=45°C; t_p=10ms (50Hz), sine	140	A
E_{AS}	T_{VJ}=25°C; non-repetitive; I_{AS}=2.5A; L=180uH	0.8	mJ
I_{AR}	V_A=1.5·V_R typ.; f=10kHz; repetitive	0.3	A
T_{VJ} T_{VJM} T_{stg}		-55...+175 175 -55...+150	°C
P_{tot}	T_C=25°C	95	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}		100 0.5	uA mA
V_F	I_F=15A; T_{VJ}=150°C T_{VJ}=25°C		1.21 1.68	V
R_{thJC} R_{thCH}		0.5	1.6	K/W
t_{rr}	I_F=1A; -di/dt=100A/us; V_R=30V; T_{VJ}=25°C	30		ns
I_{RM}	V_R=100V; I_F=25A; -di$_F$/dt=100A/us; T_{VJ}=100°C		2.7	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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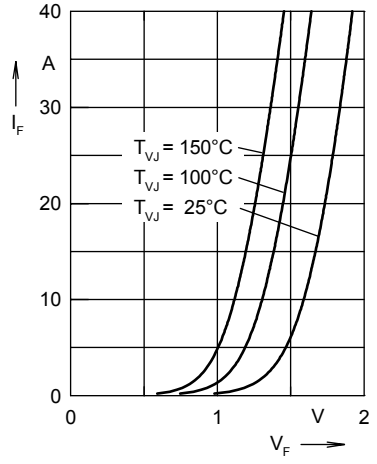

Fig. 1 Forward current I_F versus V_F

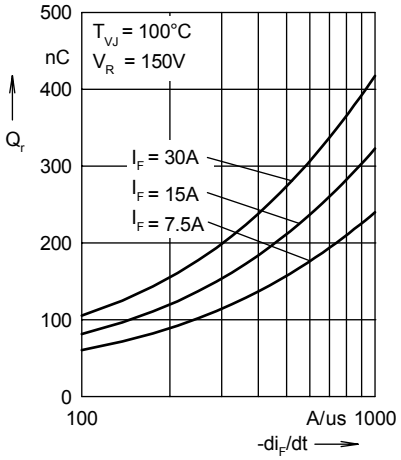

Fig. 2 Reverse recovery charge Q_r versus $-di_F/dt$

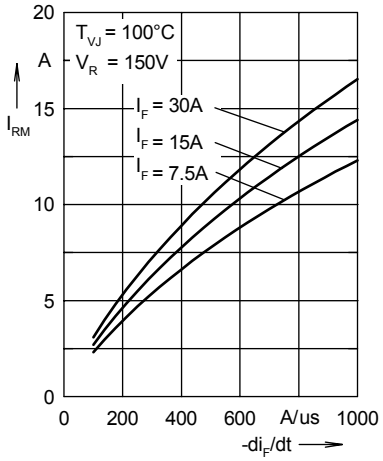

Fig. 3 Peak reverse current I_{RM} versus $-di_F/dt$

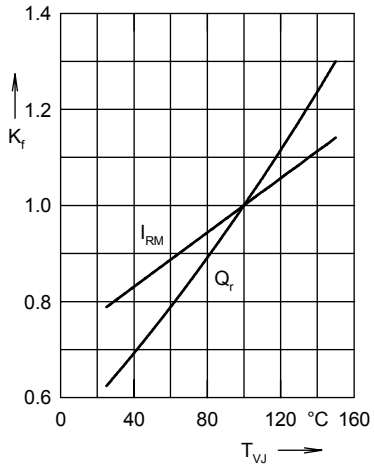

Fig. 4 Dynamic parameters Q_r, I_{RM} versus T_{VJ}

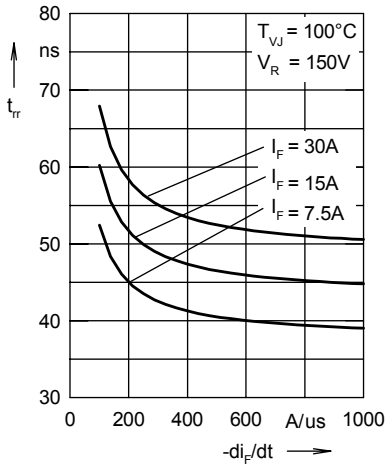

Fig. 5 Recovery time t_{rr} versus $-di_F/dt$

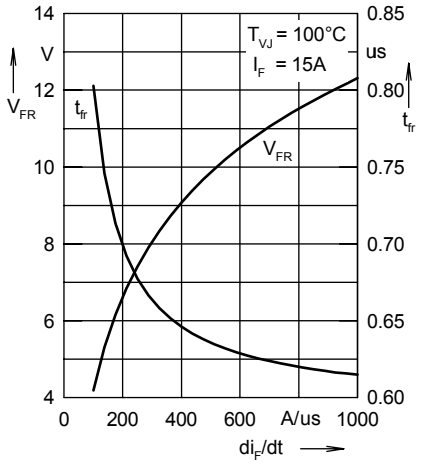

Fig. 6 Peak forward voltage V_{FR} and t_{fr} versus di_F/dt

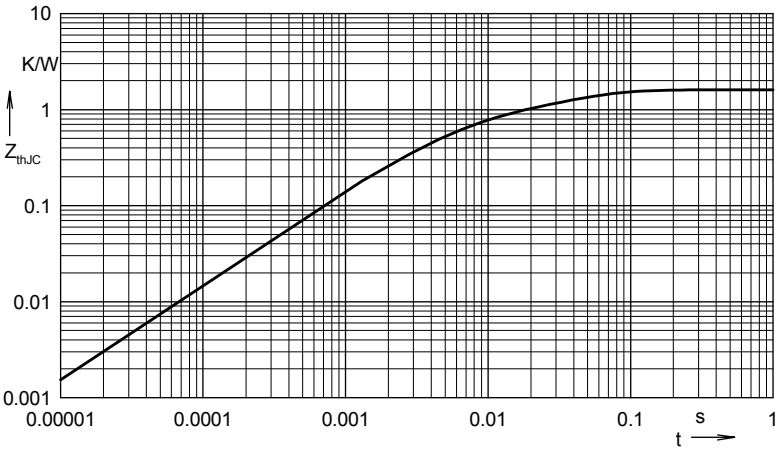

Fig. 7 Transient thermal resistance junction to case

Constants for Z_{thJC} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.908	0.005
2	0.35	0.0003
3	0.342	0.017

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