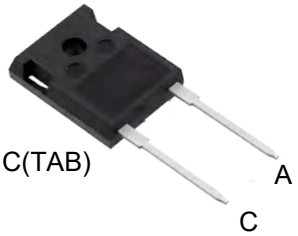
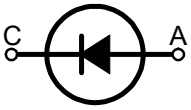
HUR8040

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

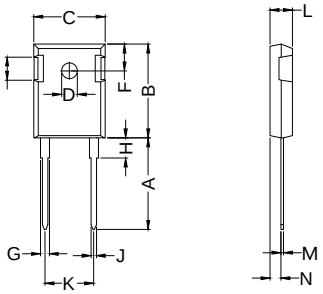




A=Anode, C=Cathode, TAB=Cathode

	V_{RSM} V	V_{RRM} V
HUR8040	400	400

Dimensions TO-247AC



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	19.81	20.32	0.780	0.800
B	20.80	21.46	0.819	0.845
C	15.75	16.26	0.620	0.640
ØD	3.15	3.65	0.124	0.144
E	4.32	5.49	0.170	0.216
F	5.40	6.30	0.213	0.248
G	1.65	2.13	0.065	0.084
H	3.80	4.50	0.150	0.177
J	1.00	1.40	0.039	0.055
K	10.80	11.10	0.425	0.437
L	4.70	5.30	0.185	0.209
M	0.40	0.80	0.016	0.031
N	1.50	2.49	0.059	0.098

Symbol	Test Conditions	Maximum Ratings	Unit
I_{FRMS} I_{FAVM}	T_C=140°C; rectangular, d=0.5	80 80	A
I_{FSM}	T_{VJ}=45°C; t_p=10ms (50Hz), sine	800	A
E_{AS}	T_{VJ}=25°C; non-repetitive; I_{AS}=tbdA; L=tbduH	0.35	mJ
I_{AR}	V_A=1.5·V_R typ.; f=10kHz; repetitive	0.30	A
T_{VJ} T_{VJM} T_{stg}		-55...+175 175 -55...+150	°C
P_{tot}	T_C=25°C	230	W
M_d	mounting torque	0.8...1.2	Nm
Weight	typical	6	g

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HUR8040

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

Symbol	Test Conditions	Characteristic Values		Unit
		typ.	max.	
I_R	T_{VJ}=25°C; V_R=V_{RRM} T_{VJ}=150°C; V_R=V_{RRM}		1 0.4	uA mA
V_F	I_F=80A; T_{VJ}=150°C T_{VJ}=25°C		1.11 1.46	V
R_{thJC} R_{thCH}		0.25	0.7	K/W
t_{rr}	I_F=1A; -di/dt=300A/us; V_R=30V; T_{VJ}=25°C	45		ns
I_{RM}	V_R=100V; I_F=80A; -di_F/dt=200A/us; T_{VJ}=100°C	17	19	A

FEATURES

* International standard package
* Planar passivated chips
* Very short recovery time
* Extremely low switching losses
* Low I_{RM}-values
* Soft recovery behaviour
* RoHS compliant

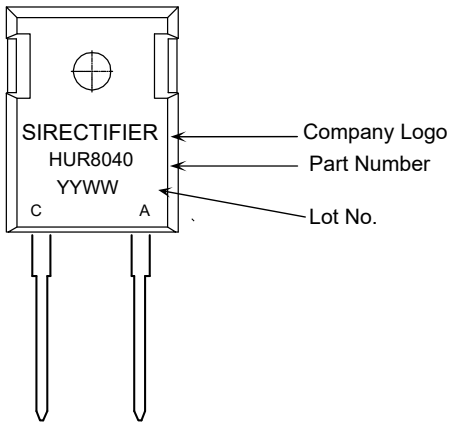
APPLICATIONS

* 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

MARKING



ORDERING INFORMATION

Part Number	Package	Shipping	Marking Code
HUR8040	TO-247AC	30pcs / Tube	HUR8040

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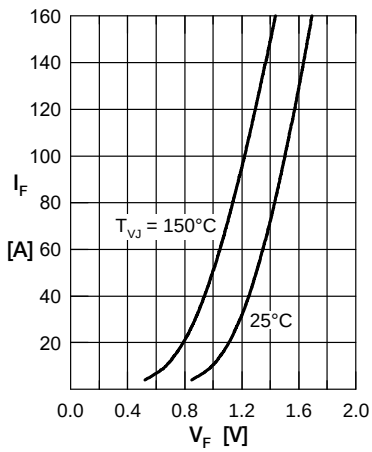

Fig. 1 Forward current I_F versus V_F

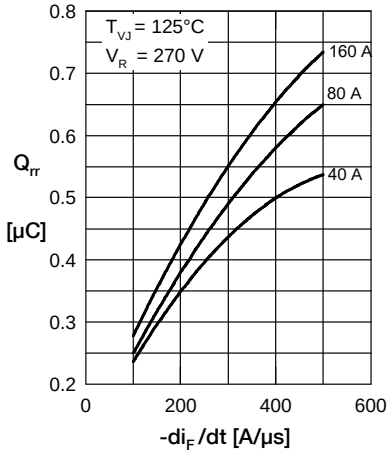

Fig. 2 Typ. reverse recov. charge Q_{rr} versus $-di_F/dt$

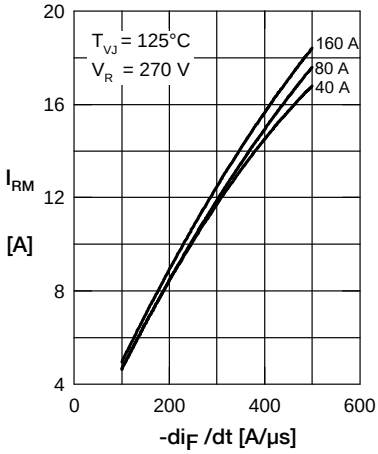

Fig. 3 Typ. reverse recov. current I_{RM} versus $-di_F/dt$

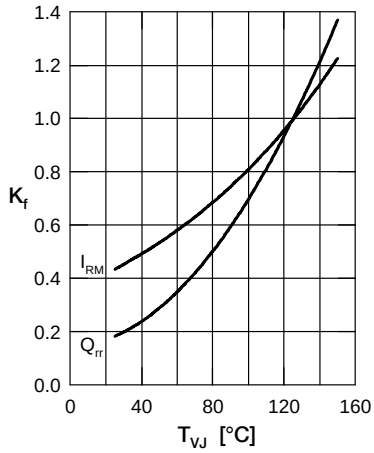

Fig. 4 Typ. dynamic parameters Q_{rr},I_{RM} versus T_{VJ}

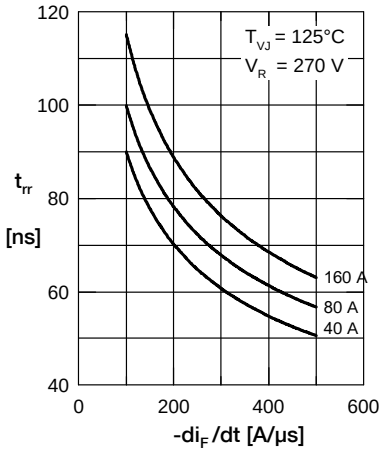

Fig. 5 Typ. reverse recov. time t_{rr} versus $-di_F/dt$

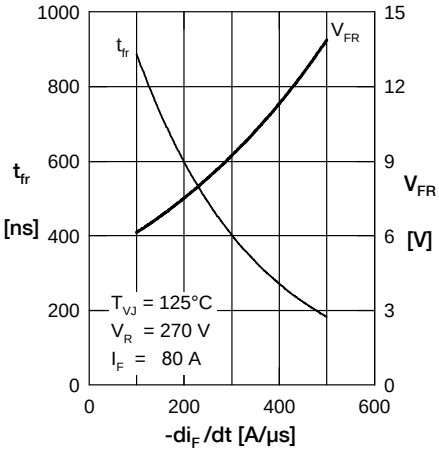

Fig. 6 Typ. forward recovery voltage V_{FR} &time t_{fr} versus di_F/dt

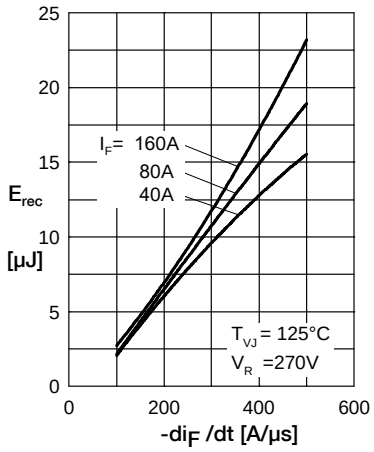

Fig. 7 Typ. recovery energy E_{rec} versus $-di_F/dt$

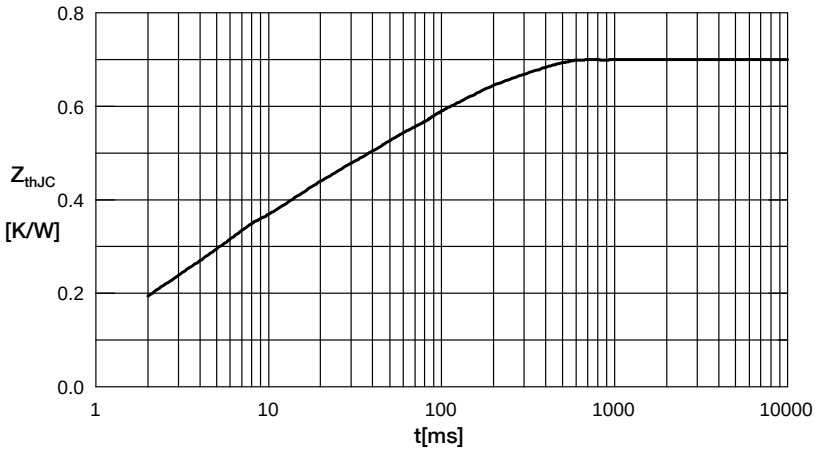

Fig. 8 Transient thermal impedance junction to case

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