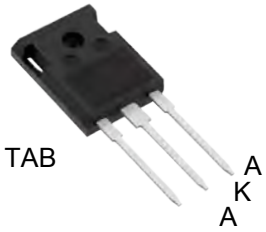
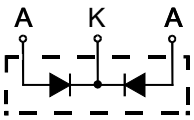
HUR60120PT

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

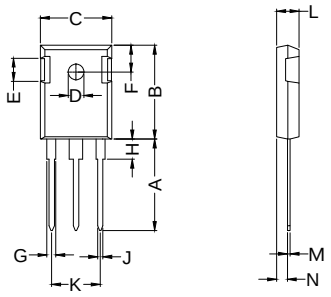




Common Cathode

A=Anode
K=Cathode
TAB=Cathode

Dimensions TO-247AD



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	2.18	0.065	0.086
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

	V_{RSM} V	V_{RRM} V
HUR60120PT	1200	1200

Symbol	Test Conditions	Maximum Ratings	Unit
I_{FRMS} I_{FAVM}	T_C=115°C; rectangular, d=0.5	70 2 x 30	A
I_{FSM}	T_{VJ}=45°C; t_p=10ms (50Hz), sine	200	A
E_{AS}	T_{VJ}=25°C; non-repetitive; I_{AS}=11.5A; L=180uH	14	mJ
I_{AR}	V_A=1.25·V_R typ.; f=10kHz; repetitive	1.2	A
T_{VJ} T_{VJM} T_{stg}		-55...+175 175 -55...+150	°C
P_{tot}	T_C=25°C	165	W
M_d	mounting torque	0.8...1.2	Nm
Weight	typical	6	g

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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}		250 1	uA mA
V_F	I_F=30A; T_{VJ}=150°C T_{VJ}=25°C	 2.00	1.78 2.74	V
R_{thJC} R_{thCH}		 0.25	0.9	K/W
t_{rr}	I_F=1A; -di/dt=200A/us; V_R=30V; T_{VJ}=25°C	40		ns
I_{RM}	V_R=100V; I_F=50A; -di_F/dt=100A/us; T_{VJ}=100°C	5.5	11.4	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

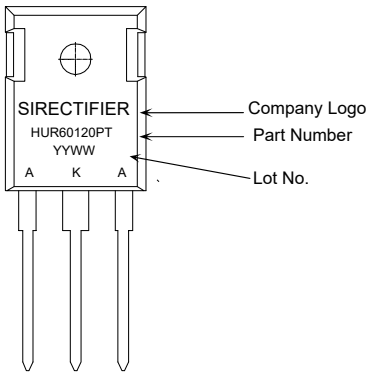
APPLICATIONS

* 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
HUR60120PT	TO-247AD	30pcs / Tube	HUR60120PT

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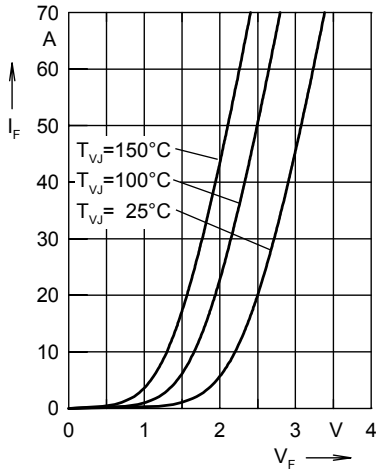

Fig. 1 Forward current I_F versus V_F

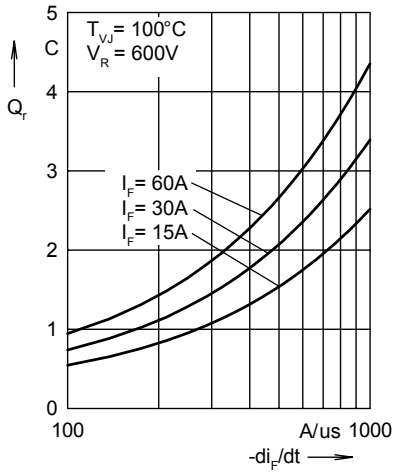

Fig. 2 Reverse recovery charge Q_r versus $-di_F/dt$

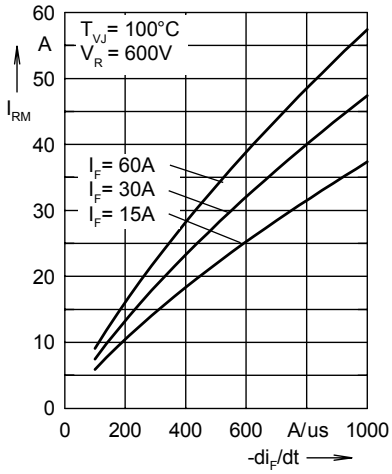

Fig. 3 Peak reverse current I_{RM} versus $-di_F/dt$

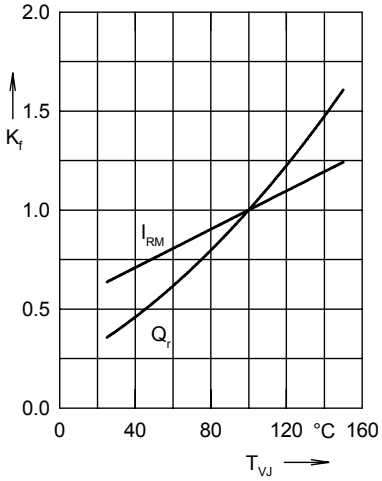

Fig. 4 Dynamic parameters Q_r, I_{RM} versus T_{VJ}

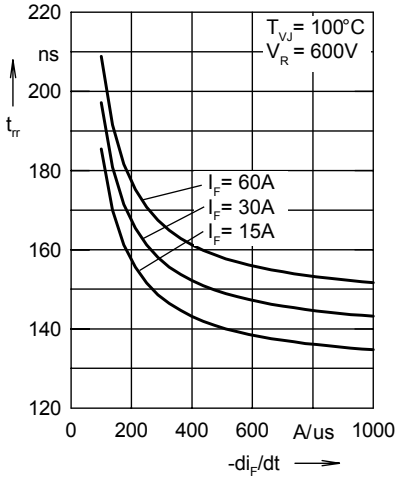

Fig. 5 Recovery time t_{rr} versus $-di_F/dt$

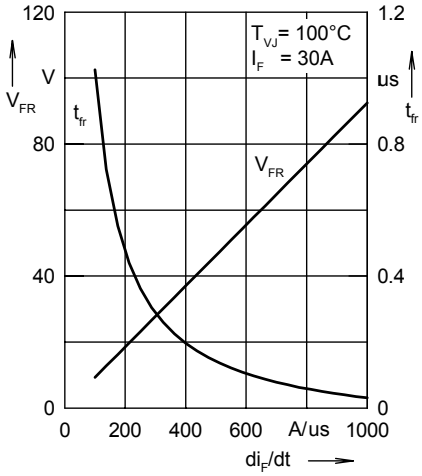

Fig. 6 Peak forward voltage V_{FR} and t_{fr} versus di_F/dt

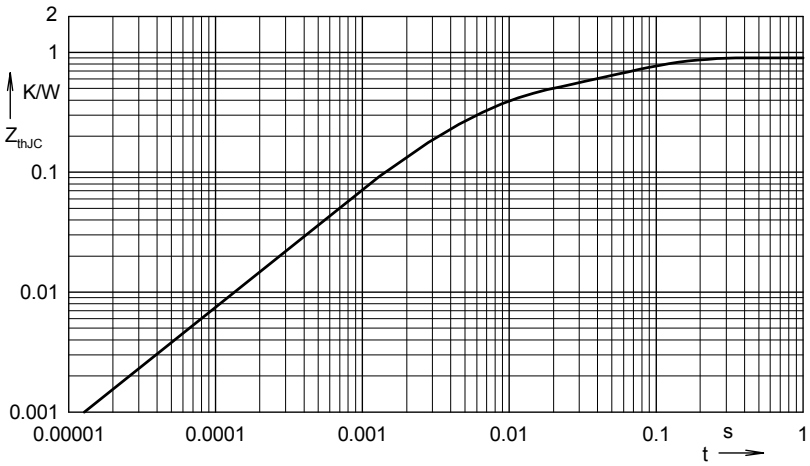

Fig. 7 Transient thermal resistance junction to case

Constants for Z_{thJC} calculation ..A:

i	R_{thi} (K/W)	t_i (s)
1	0.465	0.0052
2	0.179	0.0003
3	0.256	0.0397

Constants for Z_{thJC} calculation ..AR:

i	R_{thi} (K/W)	t_i (s)
1	0.368	0.0052
2	0.1417	0.0003
3	0.0295	0.0004
4	0.5604	0.0092

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