

FAST RECOVERY RECTIFIER DIODES

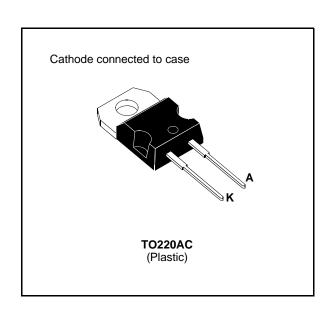
- LOW SWITCHING LOSSES
- LOW PEAK RECOVERY CURRENT IRM
- THE SPECIFICATIONS AND CURVES ENABLE THE DETERMINATION OF t_{rr} AND I_{RM} AT 100°C UNDER USERS CONDITIONS

APPLICATIONS

- MOTOR CONTROLS (FREE-WHEELING DIODE)
- SWITCH MODE POWER SUPPLIES
- SNUBBER DIODES



Fast recovery rectifiers suited for power switching applications.



ABSOLUTE MAXIMUM RATINGS (limiting values)

Symbol	Parameter	Value	Unit	
I _{FRM}	Repetive Peak Forward Current	$t_p \le 20 \mu s$	100	Α
I _{F (RMS})	RMS Forward Current		20	Α
I _{F (AV)}	Average Forward Current	$T_c = 115^{\circ}C$ $\delta = 0.5$	10	А
I _{FSM}	Surge non Repetitive Forward Current	t _p = 10ms Sinusoidal	100	А
P _{tot}	Power Dissipation	T _c = 90°C	20	W
T _{stg} T _j	Storage and Junction Temperature Range		- 40 to + 150 - 40 to + 150	°C

Symbol	Parameter Value		Unit
V_{RRM}	Repetitive Peak Reverse Voltage	600	V
V _{RSM}	Non Repetitive Peak Reverse Voltage	600	V

THERMAL RESISTANCE

Ì	Symbol	Parameter	Value	Unit
	R _{th (j - c)}	Junction-case	3	°C/W

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ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Synbol	Test Conditions		Min.	Тур.	Max.	Unit
I _R	T _j = 25°C	$V_R = V_{RRM}$			20	μΑ
	T _j = 100°C				1	mA
V_{F}	T _j = 25°C	I _F = 8A			1.5	V
	T _j = 100°C				1.25	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Тур.	Max.	Unit
t _{rr}	$T_{j}=25^{\circ}C$ $I_{F}=1A$ $di_{F}/dt=-15A/\mu s$ $V_{R}=30V$			150	ns
Q _{rr}	$T_{j}=25^{\circ}C$ $I_{F}=8A$ $di_{F}/dt=-20A/\mu s$ $V_{R}=100V$		2.2		μC
I _{RM}	$T_{j}=25^{\circ}C$ $I_{F}=8A$ $di_{F}/dt=-20A/\mu s$ $V_{R}=100V$			4	Α

To evaluate the conduction losses use the following equations:

$$V_F = 0.95 + 0.012 I_F$$
 $P = 0.95 \times I_{F(AV)} + 0.012 I_{F^2(RMS)}$

Figure 1. Low frequency power losses versus average current

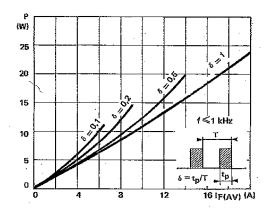


Figure 2. Peak current versus form factor

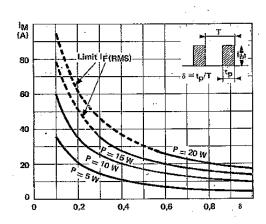


Figure 3. Non repetitive peak surge current versus overload duration

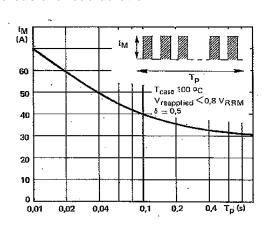


Figure 4. Thermal impedance versus pulse width

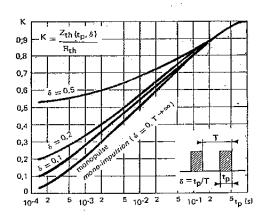


Figure 5. Voltage drop versus forward current

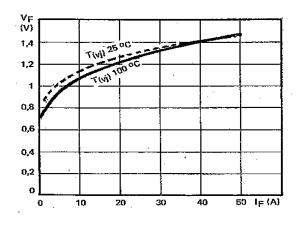
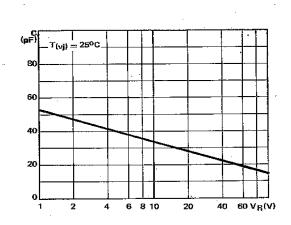


Figure 6. Capacitance versus reverse voltage



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Figure 7. Recovery time versus di_F/d_{t-}

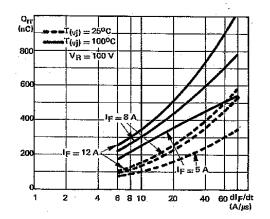


Figure 8. Recovery time versus di_F/d_{t-}

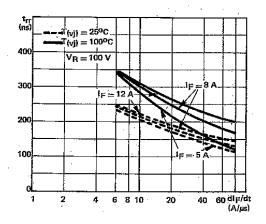
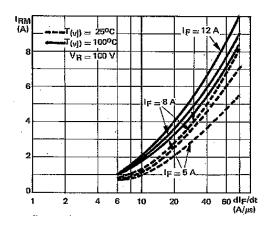


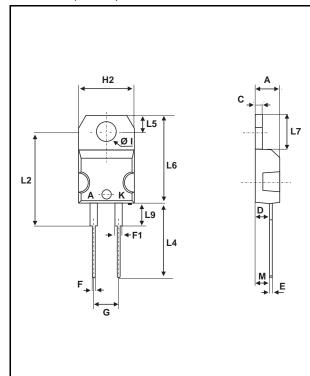
Figure 9. Peak reverse current versus di_F/d_t-



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PACKAGE MECHANICAL DATA

TO220AC (Plastic)



REF.	DIMENSIONS			
	Millimeters		Inc	hes
	Min.	Max.	Min.	Max.
Α	4.40	4.60	0.173	0.181
С	1.23	1.32	0.048	0.051
D	2.40	2.72	0.094	0.107
Е	0.49	0.70	0.019	0.027
F	0.61	0.88	0.024	0.034
F1	1.14	1.70	0.044	0.066
G	4.95	5.15	0.194	0.202
H2	10.00	10.40	0.393	0.409
L2	16.40 typ.		0.64	5 typ.
L4	13.00	14.00	0.511	0.551
L5	2.65	2.95	0.104	0.116
L6	15.25	15.75	0.600	0.620
L7	6.20	6.60	0.244	0.259
L9	3.50	3.93	0.137	0.154
М	2.6 typ.		0.102 typ.	
Diam. I	3.75	3.85	0.147	0.151

■ Marking: type number

■ Cooling method: by conduction (method C)

■ Weight: 1.86g

Recommended torque value: 80cm. NMaximum torque value: 100cm.N

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