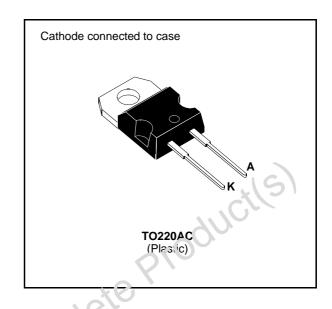




FAST RECOVERY RECTIFIER DIODE

- VERY HIGH REVERSE VOLTAGE CAPABILITY
- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING



SUITABLE APPLICATIONS

- FREE WHEELING DIODE IN CONVERTERS AND MOTOR CONTROL CIRCUITS
- RECTIFIER IN S.M.P.S.

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter		Value	Unit	
V_{RRM}	Repetitive Peak Reverse Voltage	1000	V		
V_{RSM}	Non Repetitive Peak Reverse Voltage	1000	V		
I _{FRM}	Repetitive Peak Forward Current	150	Α		
I _{F (RMS)}	RMS Forward Current	vard Current		Α	
I _{F (AV)}	Average Forward Current $ T_{case} = 100^{\circ}C $ $ \delta = 0.5 $		12	А	
I _{FSM}	Surge LC: Ropetitive Forward Current	t _p = 10ms Sinusoidal	75	А	
Р	Fower Dissipation	T _{case} = 100°C	25	W	
T _i ·g	Storage and Junction Temperature Range	- 40 to + 150 - 40 to + 150	°C		

THERMAL RESISTANCE

Symbol	Test Conditions	Value	Unit
R _{th (j - c)}	Junction-case	2	°C/W

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ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Synbol	Test Conditions			Тур.	Max.	Unit
I _R	T _j = 25°C	$V_R = V_{RRM}$			50	μΑ
	T _j = 100°C				2.5	mA
V _F	T _j = 25°C	I _F = 12A			1.9	V
	T _j = 100°C				1.8	

RECOVERY CHARACTERISTICS

Symbol		Test Conditions				Тур.	Max.	Unit
t _{rr}	T _j = 25°C	I _F = 1A	$di_F/dt = -15A/\mu s$	$V_R = 30V$			155	ns
		I _F = 0.5A	I _R = 1A	$I_{rr} = 0.25A$			65	

TURN-OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

Symbol	Test Conditions		Min.	Тур.	Max.	Unit
t _{IRM}	di _F /dt = - 50A/μs	V _{CC} = 200 V I _F = 12A			200	ns
	di _F /dt = - 100A/μs	$L_p \le 0.05 \mu H$ $T_j = 100^{\circ} C$ See figure 11		120		
I _{RM}	$di_F/dt = -50A/\mu s$				7.8	Α
	di _F /dt = - 100A/μs			9		

TURN-OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

ĺ	Symbol	Test Conditions				Тур.	Max.	Unit
	$C = \frac{V_{RP}}{V_{CC}}$	T _j = 100°C di _F /dt = - 12A/μs	V_{CC} = 200V L_p = 12 μ H	I _F = I _{F (AV)} See figure 12			4.5	

To evaluate the conduction losses use the following equations:

 $V_F = 1.47 + 0.026 I_F$

 $P = 1.47 \times IF_{(AV)} + 0.026 I_F^2_{(RMS)}$

Figure 1. Low frequency power losses versus average current

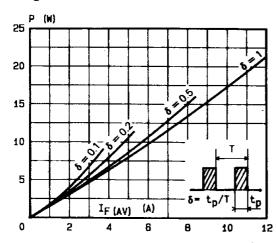


Figure 2. Peak current versus form factor

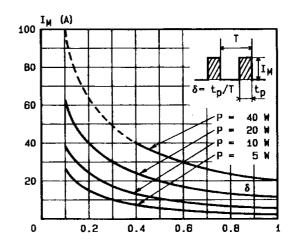


Figure 3. Non repetitive peak surge current versus overload duration

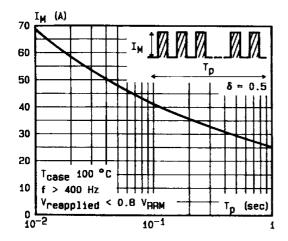


Figure 5. Voltage drop versus forward current

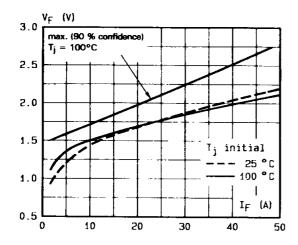


Figure 7. Recovery time versus di_F/d_t-

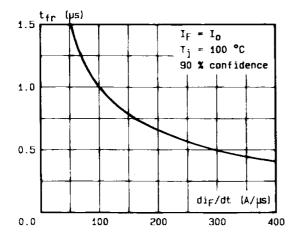


Figure 4. Thermal impedance versus pulse width

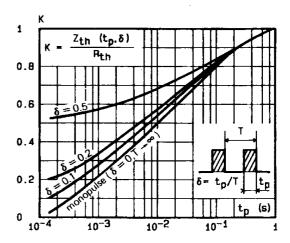


Figure 6. Recovery charge versus dif/dt

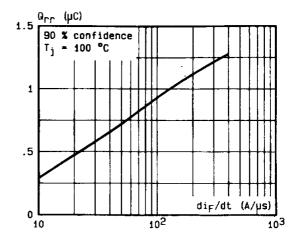


Figure 8. Peak reverse current versus di_F/d_{t-}

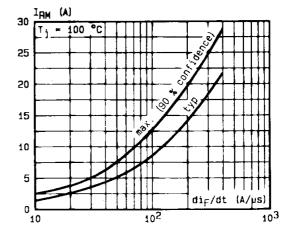


Figure 9. Peak forward voltage versus di_F/d_{tt}

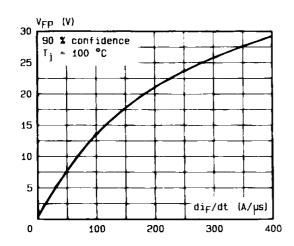


Figure 10. Dynamic parameters versus junction temperature.

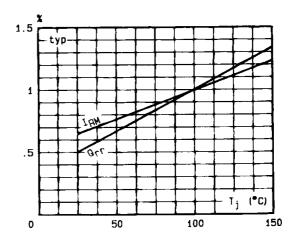


Figure 11. Turn-off switching characteristics (without series inductance).

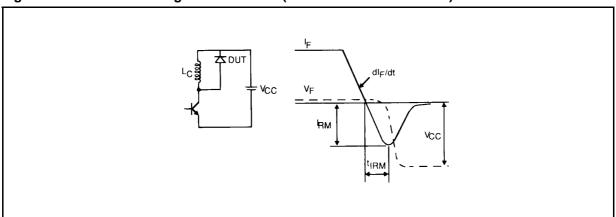
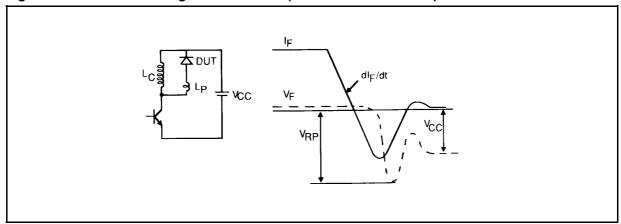


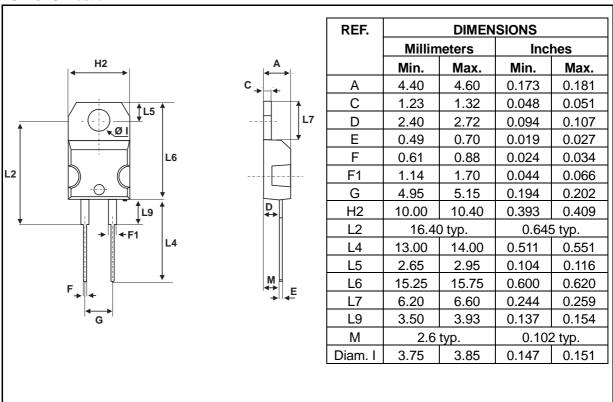
Figure 12. Turn-off switching characteristics (with series inductance)



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PACKAGE MECHANICAL DATA:

TO220AC Plastic



■ 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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