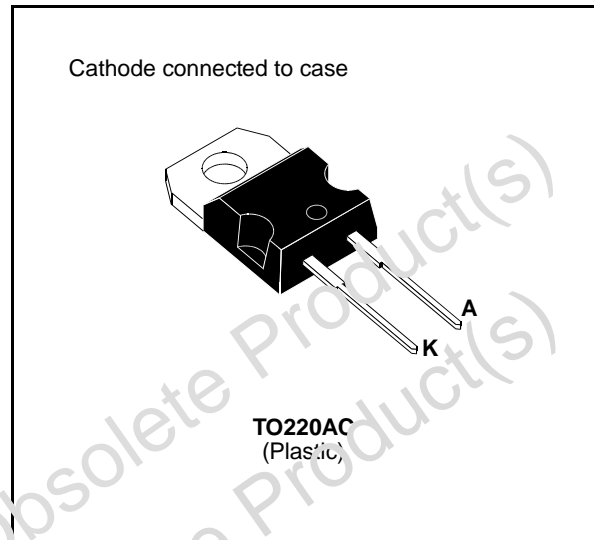


FAST RECOVERY RECTIFIER DIODE

- VERY HIGH REVERSE VOLTAGE CAPABILITY
- VERY LOW REVERSES 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 RATINGS (limiting values)

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	$t_p \leq 10\mu s$	A
$I_F (RMS)$	RMS Forward Current	16	A
$I_F (AV)$	Average Forward Current	$T_c = 115^\circ C$ $\delta = 0.5$	A
I_{FSM}	Surge Non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	A
P	Power Dissipation	$T_c = 115^\circ C$	W
T_{stg} T_j	Storage and Junction Temperature Range	- 40 to + 150 - 40 to + 150	$^\circ C$

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction-case	2	$^\circ C/W$

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I _R	T _j = 25°C	V _R = V _{R_{RM}}			35	μA
	T _j = 100°C				2	mA
V _F	T _j = 25°C	I _F = 8A			1.9	V
	T _j = 100°C				1.8	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t _{rr}	T _j = 25°C	I _F = 1A	di _F /dt = - 15A/μs	V _R = 30V		155	ns
		I _F = 0.5A	I _R = 1A		I _{rr} = 0.25A		

TURN-OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

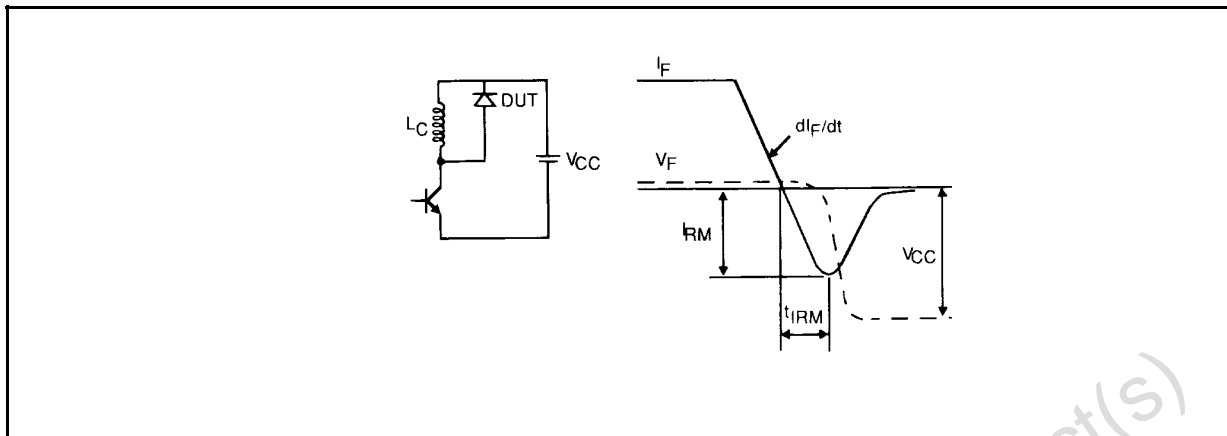
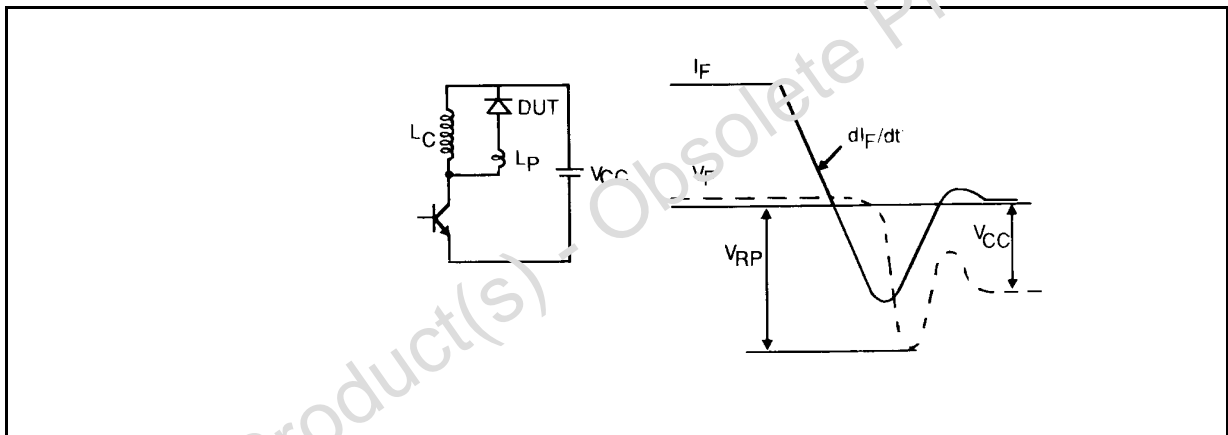
Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t _{IRM}	di _F /dt = - 32A/μs	V _{CC} = 200 V I _F = 8A L _p ≤ 0.05μH T _j = 100°C See Figure 1			200	ns
	di _F /dt = - 64A/μs			120		
I _{RM}	di _F /dt = - 32A/μs				5.5	A
	di _F /dt = - 64A/μs			6		

TURN-OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

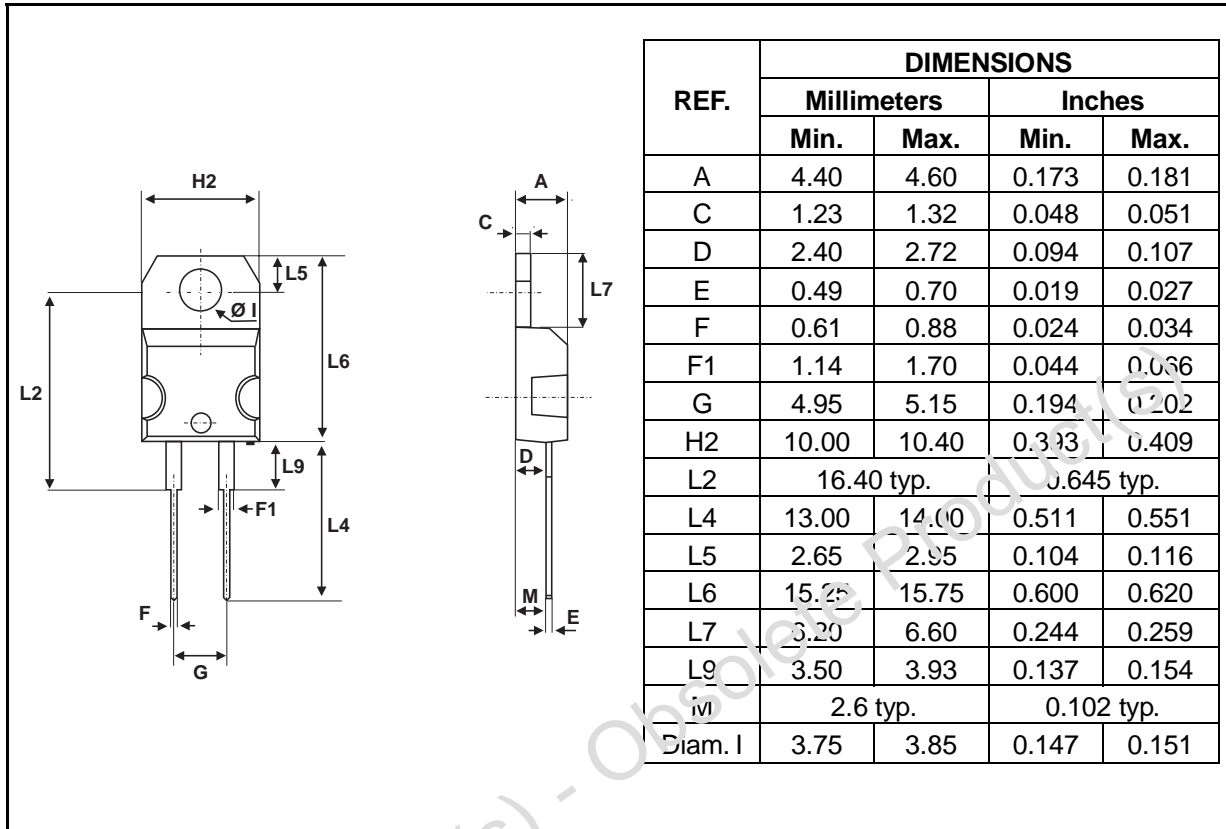
Symbol	Test Conditions		Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	T _j = 100°C di _F /dt = - 8A/μs	V _{CC} = 200V L _p = 12μH			4.5	

To evaluate the conduction losses use the following equations:

$$V_F = 1.47 + 0.041 I_F \quad P = 1.47 \times I_{F(AV)} + 0.041 I_{F(RMS)}^2$$

Figure 1. Turn-off switching characteristics (without series inductance).**Figure 2. Turn-off switching characteristics (with series inductance).**

PACKAGE MECHANICAL DATA : TO220AC Plastic



Cooling method: by conduction (method C)
 Marking: type number
 Weight: 2.42g
 Recommended torque value: 80cm. N
 Maximum torque value: 100cm. N

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