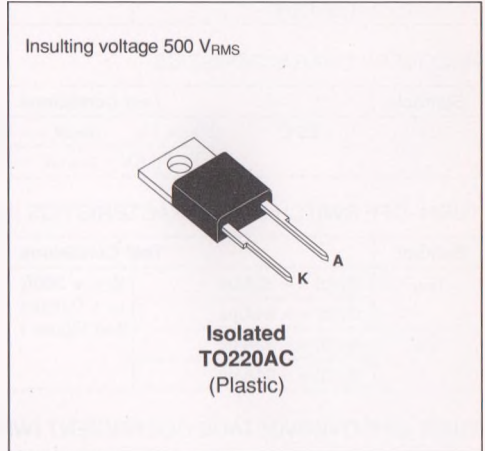


## FAST RECOVERY RECTIFIER DIODES

- HIGH REVERSE VOLTAGE CAPABILITY
- VERY LOW REVERSES RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING
- INSULATED : Capacitance 7pF



### 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
I <sub>FRM</sub>	Repetitive Peak Forward Current	t <sub>p</sub> ≤ 10μs	100	A
I <sub>F(RMS)</sub>	RMS Forward Current		16	A
I <sub>F(AV)</sub>	Average Forward Current	T <sub>case</sub> = 80°C δ = 0.5	8	A
I <sub>FSM</sub>	Surge non Repetitive Forward Current	t <sub>p</sub> = 10ms Sinusoidal	50	A
P	Power Dissipation	T <sub>case</sub> = 80°C	17	W
T <sub>stg</sub> T <sub>j</sub>	Storage and Junction Temperature Range		- 40 to + 150	°C

Symbol	Parameter	BYT 08PI-		Unit
		600	800	
V <sub>RRM</sub>	Repetitive Peak Reverse Voltage	600	800	V
V <sub>RSM</sub>	Non Repetitive Peak Reverse Voltage	640	850	V

### THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
R <sub>th(j-c)</sub>	Junction-case	4	°C/W

## ELECTRICAL CHARACTERISTICS

## STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
$I_R$	$T_j = 25^\circ\text{C}$	$V_R = V_{RRM}$			35	$\mu\text{A}$
	$T_j = 100^\circ\text{C}$				2	$\text{mA}$
$V_F$	$T_j = 25^\circ\text{C}$	$I_F = 8\text{A}$			1.9	V
	$T_j = 100^\circ\text{C}$				1.8	

## RECOVERY CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
$t_{rr}$	$T_j = 25^\circ\text{C}$	$I_F = 1\text{A}$	$di_F/dt = -15\text{A}/\mu\text{s}$	$V_R = 30\text{V}$		120	ns
		$I_F = 0.5\text{A}$	$I_R = 1\text{A}$	$I_{rr} = 0.25\text{A}$		50	

## TURN - OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
$t_{IRM}$	$di_F/dt = -32\text{A}/\mu\text{s}$	$V_{CC} = 200\text{V}$	$I_F = 8\text{A}$	$L_p \leq 0.05\mu\text{H}$	$T_j = 100^\circ\text{C}$	160	ns
	$di_F/dt = -64\text{A}/\mu\text{s}$						
$I_{RM}$	$di_F/dt = -32\text{A}/\mu\text{s}$	See Figure 1				4	A
	$di_F/dt = -64\text{A}/\mu\text{s}$		5				

## TURN - OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	$T_j = 100^\circ\text{C}$	$V_{CC} = 150\text{V}$	$I_F = I_{F(AV)}$			4	
	$di_F/dt = -8\text{A}/\mu\text{s}$	$L_p = 12\mu\text{H}$	See Figure 2				

To evaluate the conduction losses use the following equations :

$$V_F = 1.47 + 0.04 I_F$$

$$P = 1.47 \times I_{F(AV)} + 0.04 I_F^2 (RMS)$$

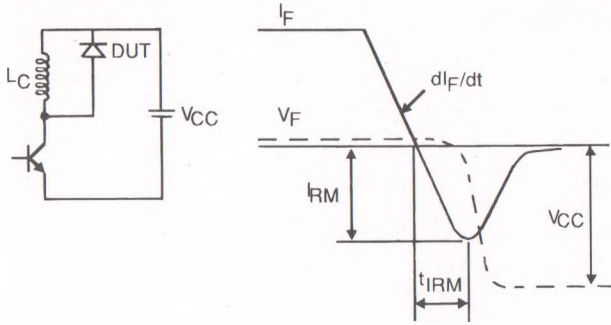


Figure 1 : Turn-off switching characteristics (without series inductance).

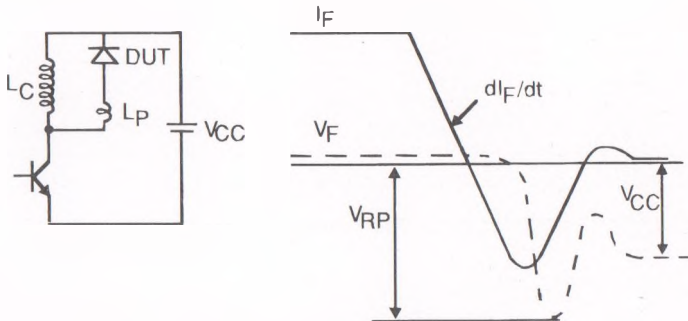


Figure 2 : Turn-off switching characteristics (with series inductance).