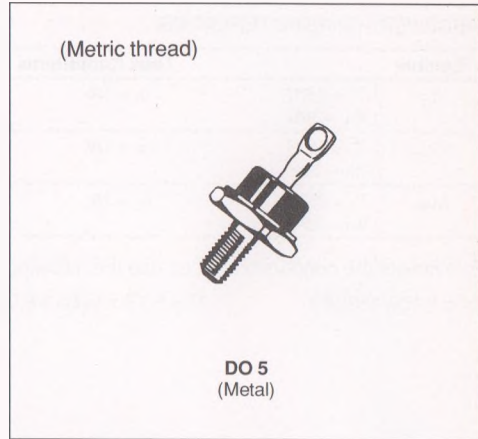


## FAST RECOVERY RECTIFIER DIODES

- VERY FAST RECOVERY TIME
- HIGH SURGE CURRENT CAPABILITY
- VERY LOW FORWARD RECOVERY TIME
- VERY LOW RECOVERED CHARGE



### APPLICATIONS

- DC AND AC MOTOR CONTROL
- SWITCHMODE POWER SUPPLY
- HIGH FREQUENCY CHOPPERS

### ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
$I_{FRM}$	Repetitive Peak Forward Current	$t_p \leq 20\mu s$	500	A
$I_{F(AV)}$	Average Forward Current	$T_C = 90^\circ C$	60	A
$I_{FSM}$	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	800	A
$P_{TOT}$	Power Dissipation	$T_C = 90^\circ C$	110	W
$T_{stg}$ $T_j$	Storage and Junction Temperature Range		- 65 to 165	$^\circ C$

Symbol	Parameter	ESM 243-					Unit
		50	100	200	300	400	
$V_{RRM}$	Repetitive Peak Reverse Voltage	50	100	200	300	400	V

### THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction-case	0.7	$^\circ C/W$

## ELECTRICAL CHARACTERISTICS

## STATIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
$I_R$	$T_j = 100^\circ\text{C}$	$V_R = V_{RRM}$				10	mA
$V_F$	$T_j = 25^\circ\text{C}$	$I_F = 60\text{A}$				1.5	V

## RECOVERY CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
$t_{rr}$	$T_j = 25^\circ\text{C}$ $V_R = 30\text{V}$	$I_F = 1\text{A}$	$di_F/dt = -15\text{A}/\mu\text{s}$			100	ns
$Q_{rr}$	$T_j = 25^\circ\text{C}$ $V_R = 30\text{V}$	$I_F = 1\text{A}$	$di_F/dt = -15\text{A}/\mu\text{s}$			0.075	$\mu\text{C}$
$I_{RM}$	$T_j = 25^\circ\text{C}$ $V_R = 30\text{V}$	$I_F = 1\text{A}$	$di_F/dt = -15\text{A}/\mu\text{s}$			1.5	A

To evaluate the conduction losses use the following equations :

$$V_F = 1.15 + 0.004 I_F$$

$$P = 1.15 \times I_{F(AV)} + 0.004 I_{F(RMS)}^2$$