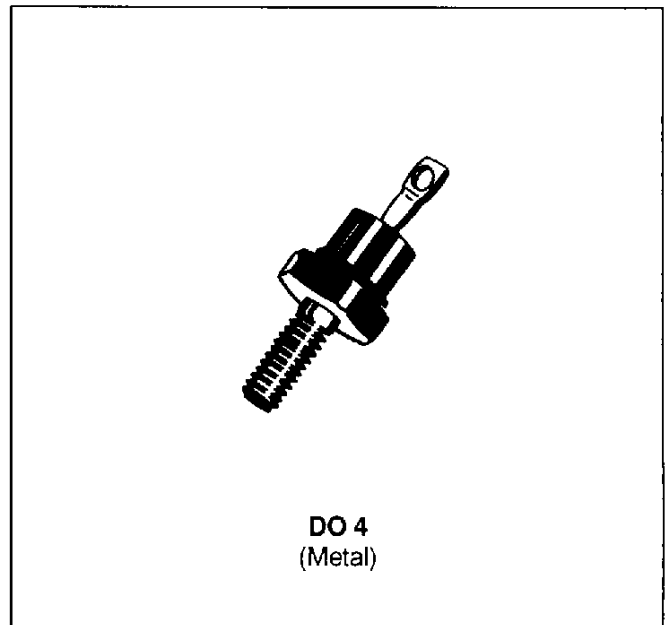# SGS-THOMSON MICROELECTRONICS

BYX 61-50 → 400

FAST RECOVERY RECTIFIER DIODES

- VERY FAST RECOVERY TIME
- VERY LOW FORWARD RECOVERY TIME
- VERY LOW RECOVERED CHARGE

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

DO 4
(Metal)

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 20\mu s$	130	A
$I_{F(AV)}$	Average Forward Current	$T_C = 100°C$	12	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	150	A
P_{tot}	Power Dissipation	$T_C = 100°C$	20	W
T_{stg} T_J	Storage and Junction Temperature Range		− 65 to 150	°C

Symbol	Parameter	BYX61-					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	2.5	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	$T_j = 100°C$	$V_R = V_{RRM}$			3	mA
V_F	$T_j = 25°C$	$I_F = 12A$			1.5	V

RECOVERY CHARACTERISTICS

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

To evaluate the conduction losses use the following equations :

$V_F = 1.15 + 0.015 \, I_F$ $P = 1.5 \times I_{F(AV)} + 0.015 \, I_F^2 \text{(RMS)}$