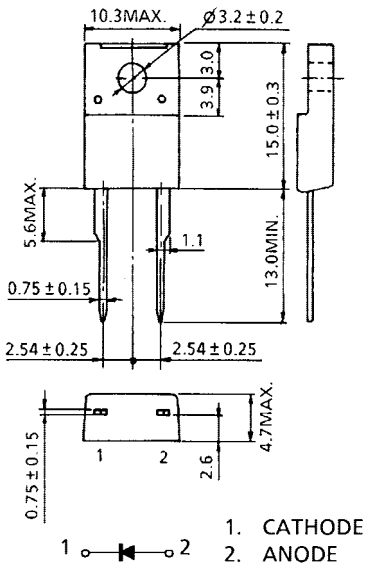
TOSHIBA HIGH EFFICIENCY RECTIFIER SILICON EPITAXIAL TYPE

5JLZ47A

SWITCHING MODE POWER SUPPLY APPLICATION
CONVERTER & CHOPPER APPLICATION

- Repetitive Peak Reverse Voltage : V_{RRM} = 600V
- Peak Forward Voltage : V_{FM} = 4.0V
- Ultra Fast Reverse-Recovery Time : t_{rr} = 35ns

Unit: mm



JEDEC	—
JEITA	—
TOSHIBA	3−10C3A

Weight: 2.0 g

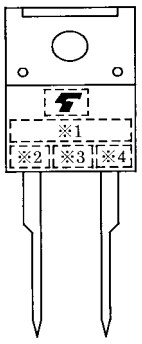
MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Repetitive Peak Reverse Voltage	V_{RRM}	600	V
Average Forward Current	$I_{F\ (AV)}$	5	A
Peak One Cycle Surge Forward Current (Non−Repetitive)	I_{FSM}	40	A
Junction Temperature	T_j	−40~150	°C
Storage Temperature Range	T_{stg}	−40~150	°C

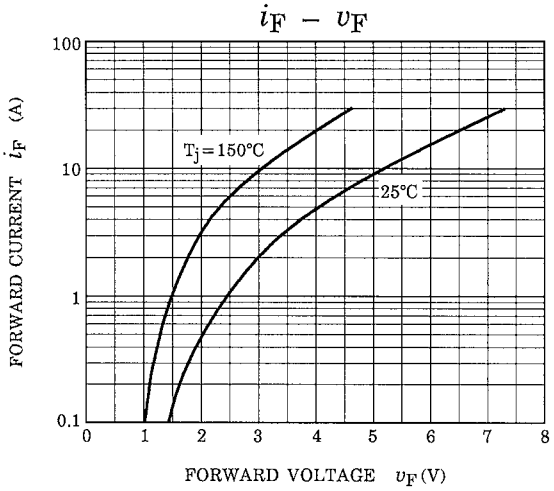
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

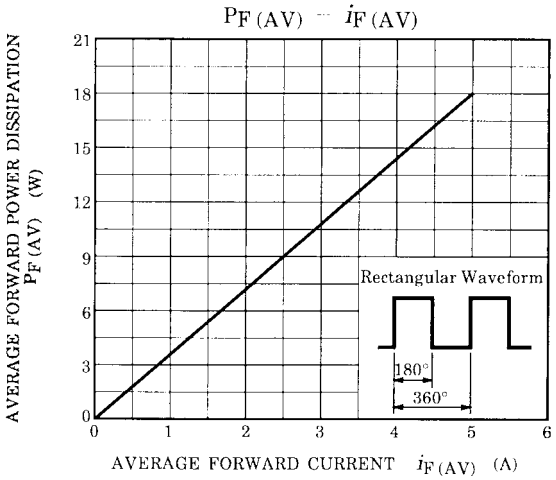
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN	TYP.	MAX	UNIT
Peak Forward Voltage	V_{FM}	I_{FM} = 5A	—	—	4.0	V
Repetitive Peak Reverse Current	I_{RRM}	V_{RRM} = 600V	—	—	50	μA
Reverse Recovery Time	t_{rr}	I_F = 2A, di / dt = −20A / μs	—	—	35	ns
Thermal Resistance	$R_{th\ (j-c)}$	DC	—	—	4.5	°C / W

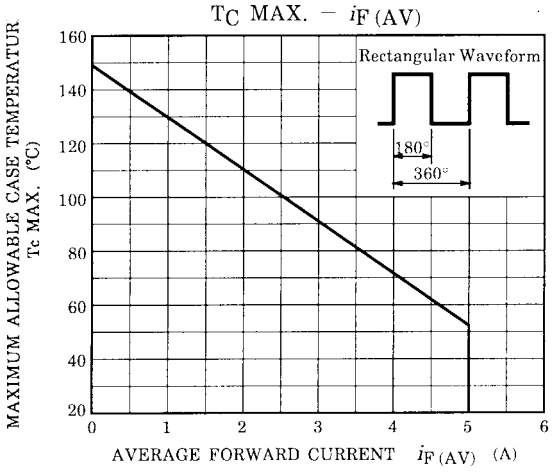
MARKING

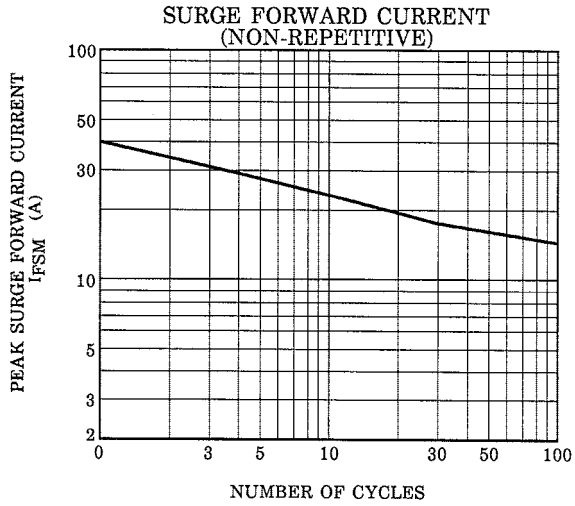


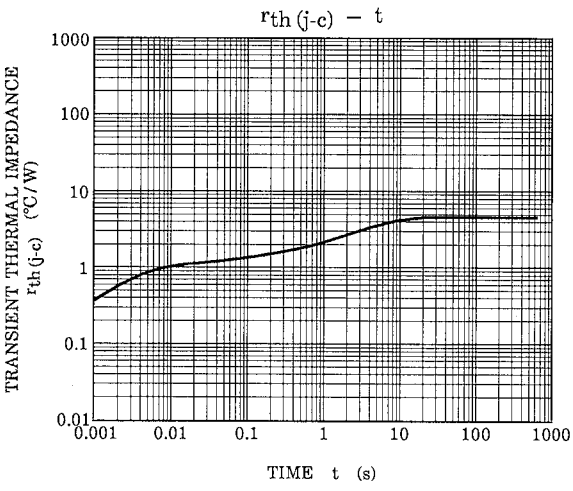
*1	Mark	5JLZ47	TYPE	5JLZ47A
*2	A			
*3	Polarity			
*4	Lot Number □□ — Month (Starting from Alphabet A) └— Year (Last Number of the Christian Era)			

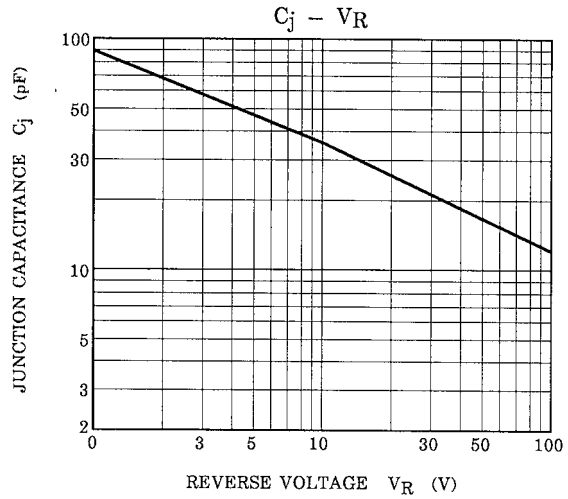

$i_F - v_F$
FORWARD CURRENT i_F (A)
100
10
1
0.1
T_j=150°C
25°C
0 1 2 3 4 5 6 7 8
FORWARD VOLTAGE v_F (V)


$P_{F(AV)} - i_{F(AV)}$
AVERAGE FORWARD POWER DISSIPATION $P_{F(AV)}$ (W)
21
18
15
12
9
6
3
0
Rectangular Waveform
180°
360°
0 1 2 3 4 5 6
AVERAGE FORWARD CURRENT $i_{F(AV)}$ (A)


T_C MAX. – $i_{F(AV)}$
MAXIMUM ALLOWABLE CASE TEMPERATUR T_C MAX. (°C)
160
140
120
100
80
60
40
20
Rectangular Waveform
180°
360°
0 1 2 3 4 5 6
AVERAGE FORWARD CURRENT $i_{F(AV)}$ (A)


SURGE FORWARD CURRENT
(NON-REPETITIVE)
PEAK SURGE FORWARD CURRENT I_{FSM} (A)
100
50
30
10
5
3
2
0 3 5 10 30 50 100
NUMBER OF CYCLES


$r_{th(j-c)}$ – t
TRANSIENT THERMAL IMPEDANCE $r_{th(j-c)}$ (°C/W)
1000
100
10
1
0.1
0.01
0.001 0.01 0.1 1 10 100 1000
TIME t (s)


$C_j - V_R$
JUNCTION CAPACITANCE C_j (pF)
100
50
30
10
5
3
2
0 3 5 10 30 50 100
REVERSE VOLTAGE V_R (V)

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