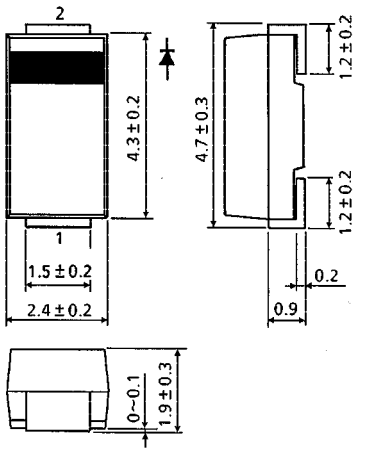
TOSHIBA SCHOTTKY BARRIER RECTIFIER SCHOTTKY BARRIER TYPE

U1FWJ44L

HIGH SPEED RECTIFIER APPLICATIONS

- Low Forward Voltage : V_{FM} = 0.40V (Max)
- Average Forward Current : $I_{F\ (AV)}$ = 1.0A
- Repetitive Peak Reverse Voltage : V_{RRM} = 30V

Unit: mm



JEDEC	—
JEITA	—
TOSHIBA	3−4D1A

Weight: 0.06g

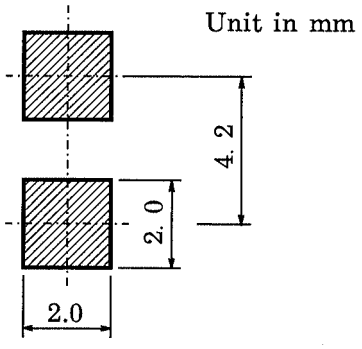
MAXIMUM RATINGS (Ta = 25°C)

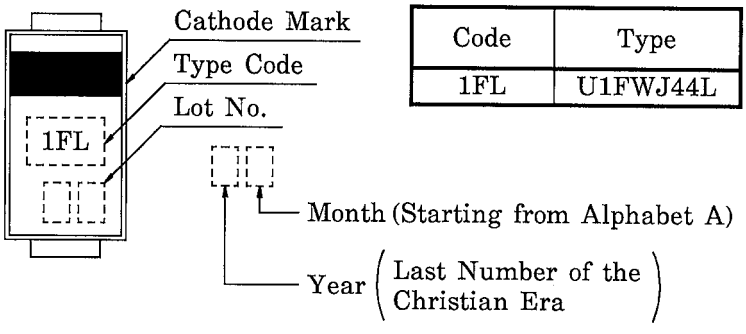
CHARACTERISTIC	SYMBOL	RATING	UNIT
Repetitive Peak Reverse Voltage	V_{RRM}	30	V
Average Forward Current	$I_{F\ (AV)}$	1.0	A
Peak One Cycle Surge Forward Current (Non−Repetitive)	I_{FSM}	20 (50Hz)	A
Junction Temparature	T_j	−40~125	°C
Storage Temparature Range	T_{stg}	−40~125	°C

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

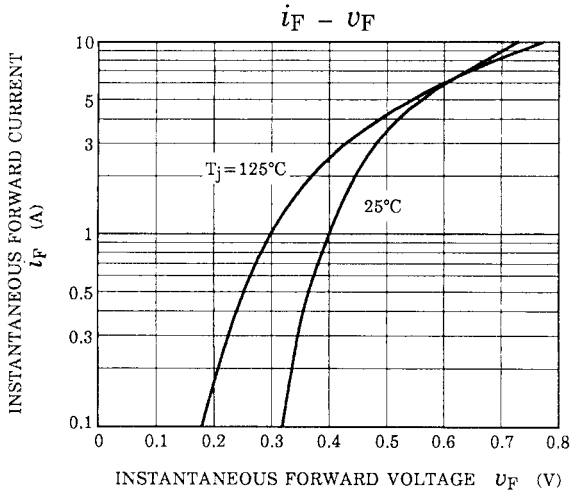
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN	TYP.	MAX	UNIT
Peak Forward Voltage	V_{FM}	I_{FM} = 1.0A	—	—	0.40	V
Repetitive Peak Reverse Current	I_{RRM}	V_{RRM} = 30V	—	—	0.8	mA
Junction Capacitance	C_j	V_R = 10V, f = 1MHz	—	60	—	pF

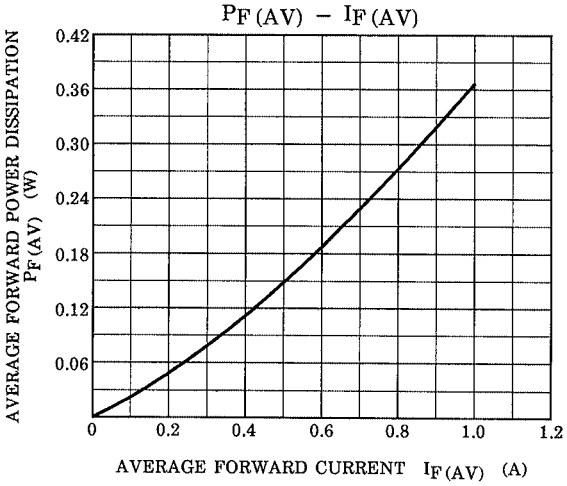
STANDARD SOLDERING PAD MARKING

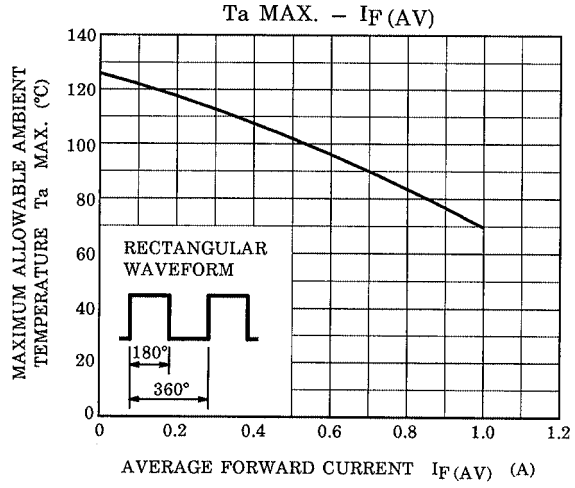


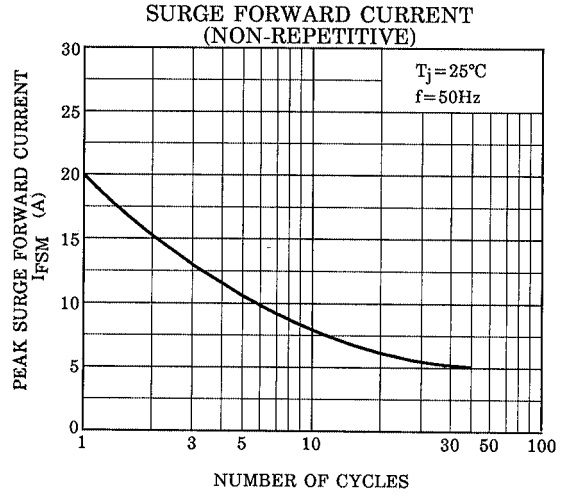


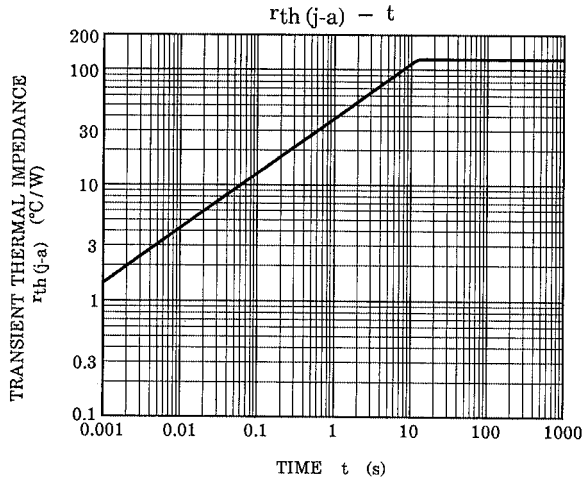
Code	Type
1FL	U1FWJ44L

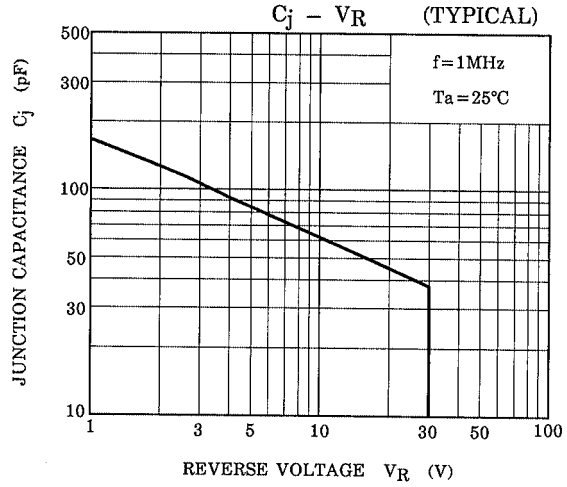

i_F – v_F
INSTANTANEOUS FORWARD CURRENT i_F (A)
10
5
3
1
0.5
0.3
0.1
T_j = 125°C
25°C
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
INSTANTANEOUS FORWARD VOLTAGE v_F (V)

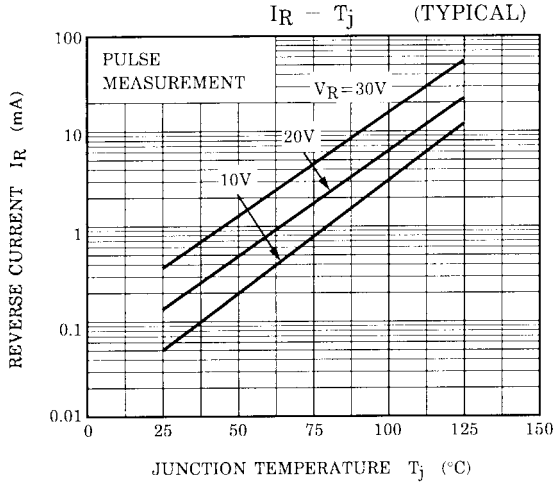

$P_{F(AV)}$ – $I_{F(AV)}$
AVERAGE FORWARD POWER DISSIPATION $P_{F(AV)}$ (W)
0.42
0.36
0.30
0.24
0.18
0.12
0.06
0
0.2
0.4
0.6
0.8
1.0
1.2
AVERAGE FORWARD CURRENT $I_{F(AV)}$ (A)

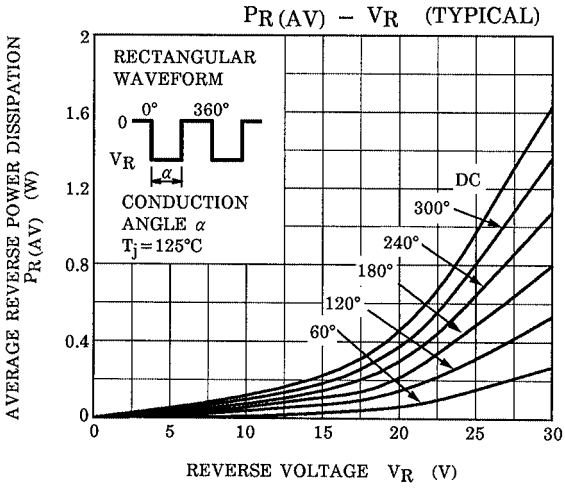

Ta MAX. – $I_{F(AV)}$
MAXIMUM ALLOWABLE AMBIENT TEMPERATURE Ta MAX. (°C)
140
120
100
80
60
40
20
0
RECTANGULAR WAVEFORM
180°
360°
0
0.2
0.4
0.6
0.8
1.0
1.2
AVERAGE FORWARD CURRENT $I_{F(AV)}$ (A)


SURGE FORWARD CURRENT
(NON-REPETITIVE)
PEAK SURGE FORWARD CURRENT I_{FSM} (A)
30
25
20
15
10
5
0
T_j = 25°C
f = 50Hz
1
3
5
10
30
50
100
NUMBER OF CYCLES


$r_{th\,(j\text{-}a)}$ – t
TRANSIENT THERMAL IMPEDANCE $r_{th\,(j\text{-}a)}$ (°C/W)
200
100
30
10
3
1
0.3
0.1
0.001
0.01
0.1
1
10
100
1000
TIME t (s)


C_j – V_R (TYPICAL)
JUNCTION CAPACITANCE C_j (pF)
500
300
100
50
30
10
f = 1MHz
Ta = 25°C
1
3
5
10
30
50
100
REVERSE VOLTAGE V_R (V)


I_R – T_j (TYPICAL)
PULSE
MEASUREMENT
V_R=30V
20V
10V
REVERSE CURRENT I_R (mA)
100
10
1
0.1
0.01
0
25
50
75
100
125
150
JUNCTION TEMPERATURE T_j (°C)


$P_{R(AV)}$ – V_R (TYPICAL)
RECTANGULAR
WAVEFORM
0°
360°
0
V_R
α
CONDUCTION
ANGLE α
T_j=125°C
DC
300°
240°
180°
120°
60°
AVERAGE REVERSE POWER DISSIPATION
$P_{R(AV)}$ (W)
2
1.6
1.2
0.8
0.4
0
0
5
10
15
20
25
30
REVERSE VOLTAGE V_R (V)

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000707EAA

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