TOSHIBA HIGH EFFICIENCY DIODE STACK (HED) SILICON EPITAXIAL TYPE

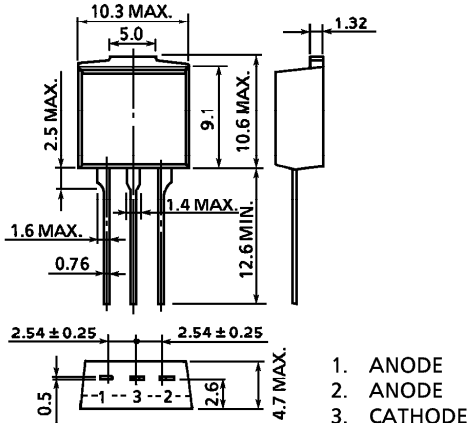
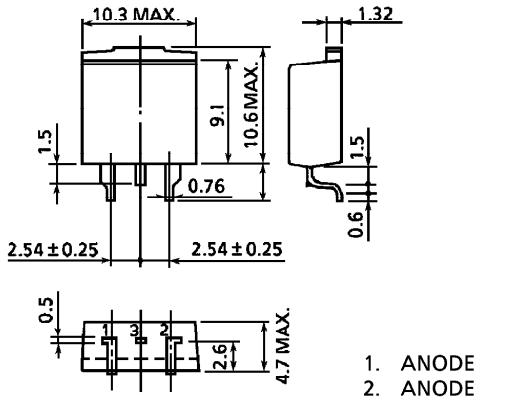
10DL2C48A, 10FL2C48A, U10DL2C48A, U10FL2C48A

SWITCHING TYPE POWER SUPPLY APPLICATION.

CONVERTER & CHOPPER APPLICATION.

- Repetitive Peak Reverse Voltage : V_{RRM}=200, 300V
- Average Output Rectified Current : I_O=10A
- Ultra Fast Reverse-Recovery Time : t_{rr}=35ns Max.
- Low Switching Losses and Output Noise.

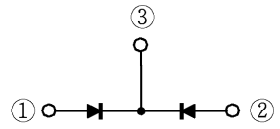
Unit in mm

10DL2C48A, 10FL2C48A	U10DL2C48A, U10FL2C48A
	
JEDEC —	JEDEC —
EIAJ —	EIAJ —
TOSHIBA 12-10D1A	TOSHIBA 12-10D2A

MAXIMUM RATINGS

CHARACTERISTIC		SYMBOL	RATING	UNIT
Repetitive Peak Reverse Voltage	10DL2C48A	V_{RRM}	200	V
	U10DL2C48A			
	10FL2C48A		300	
	U10FL2C48A			
Average Output Rectified Current		I_O	10	A
Peak One Cycle Surge Forward Current		I_{FSM}	50 (50Hz)	A
			55 (60Hz)	
Junction Temperature		T_j	−40~150	°C
Storage Temperature Range		T_{stg}	−40~150	°C

POLARITY



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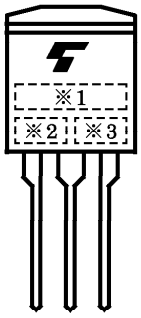
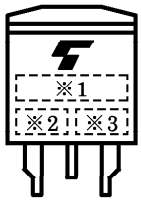
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Peak Forward Voltage	10DL2C48A	V_{FM}	I_{FM} = 5A	—	—	0.98	V
	U10DL2C48A						
	10FL2C48A			—	—	1.3	
	U10FL2C48A						
Repetitive Peak Reverse Current		I_{RRM}	V_{RRM} = Rated	—	—	10	μA
Reverse Recovery Time		t_{rr}	I_F = 2A, di / dt = −20A / μs	—	—	35	ns
Forward Recovery Time		t_{fr}	I_F = 1A	—	—	100	ns
Thermal Resistance		$R_{th\ (j\text{-}c)}$	DC Total, Junction to Case	—	—	2.5	°C / W

V_{FM}, I_{RRM}, t_{rr}, t_{fr} : A Value of one cell.

MARKING





※ 1	MARK	10DL2C 10FL2C	TYPE	10DL2C48A, U10DL2C48A 10FL2C48A, U10FL2C48A
※ 2	A			
※ 3	Lot Number □□ — Month (Starting form Alphabet A) └— Year (Last Number of the Cristian Era)			

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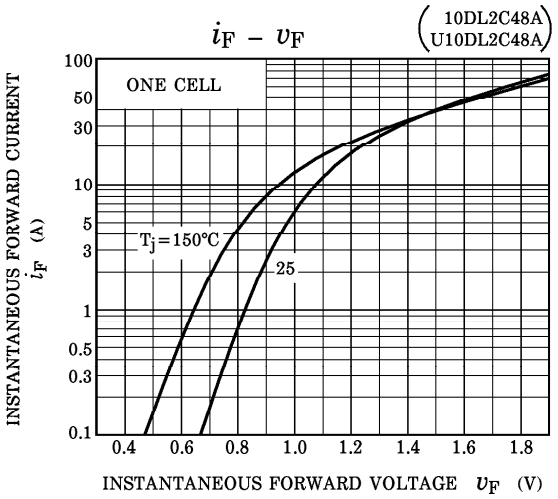
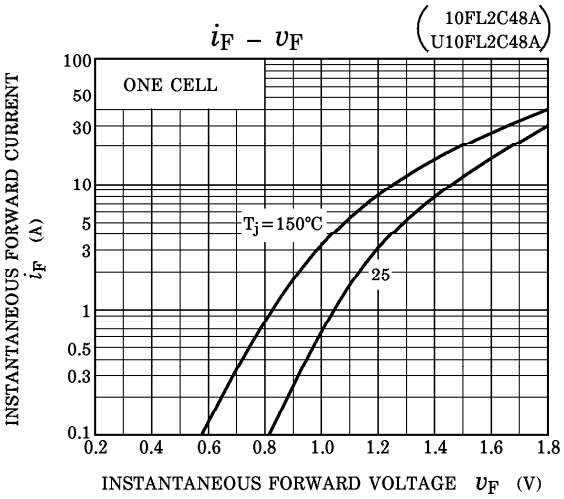
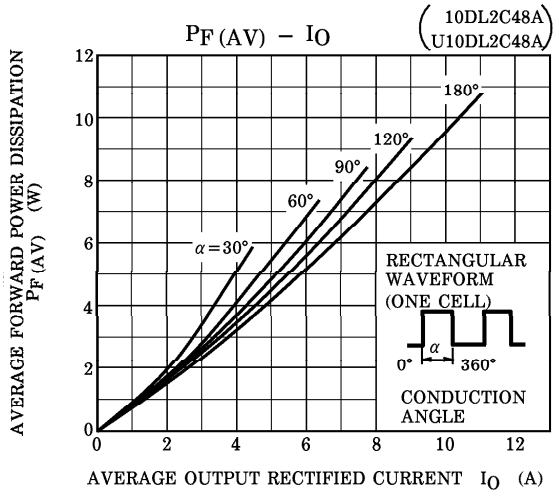
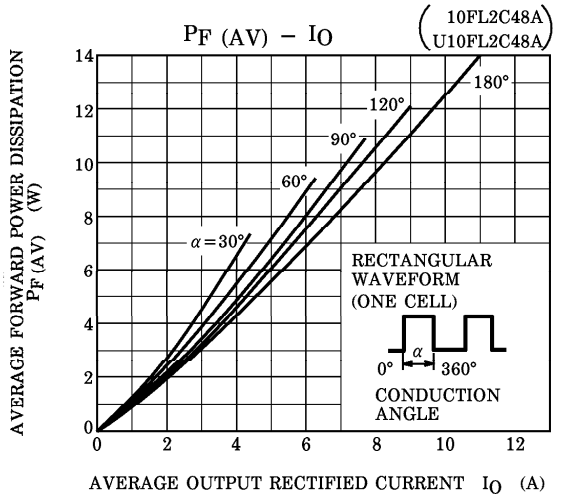
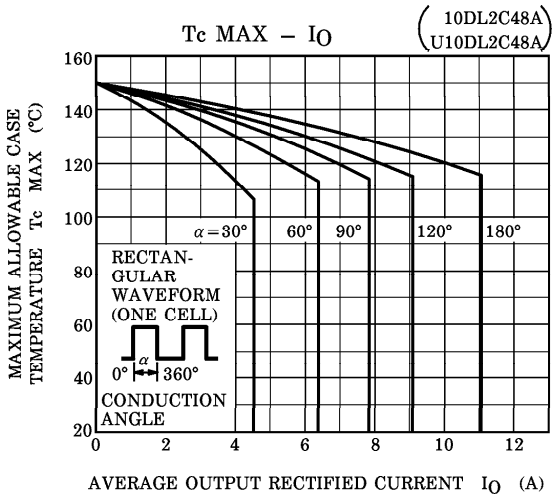
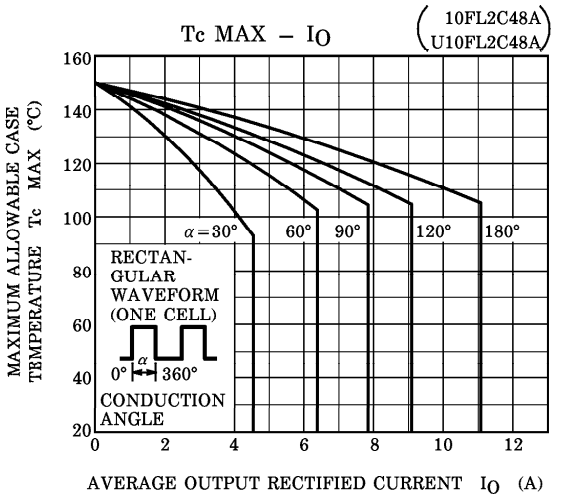

$i_F - v_F$
10DL2C48A
U10DL2C48A
ONE CELL
T_j=150°C
25
INSTANTANEOUS FORWARD CURRENT i_F (A)
INSTANTANEOUS FORWARD VOLTAGE v_F (V)


$i_F - v_F$
10FL2C48A
U10FL2C48A
ONE CELL
T_j=150°C
25
INSTANTANEOUS FORWARD CURRENT i_F (A)
INSTANTANEOUS FORWARD VOLTAGE v_F (V)

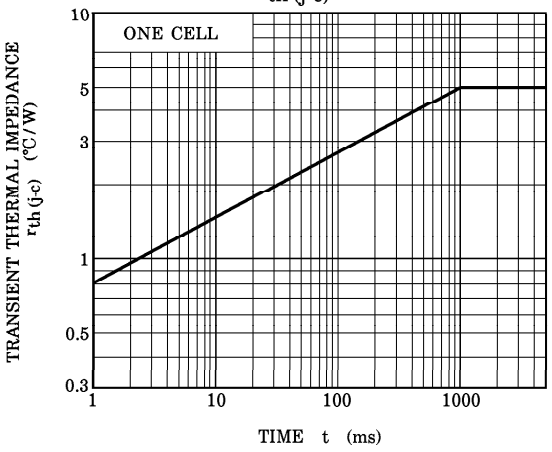

$P_{F(AV)} - I_O$
10DL2C48A
U10DL2C48A
180°
120°
90°
60°
α=30°
RECTANGULAR WAVEFORM (ONE CELL)
CONDUCTION ANGLE
AVERAGE FORWARD POWER DISSIPATION $P_{F(AV)}$ (W)
AVERAGE OUTPUT RECTIFIED CURRENT I_O (A)


$P_{F(AV)} - I_O$
10FL2C48A
U10FL2C48A
180°
120°
90°
60°
α=30°
RECTANGULAR WAVEFORM (ONE CELL)
CONDUCTION ANGLE
AVERAGE FORWARD POWER DISSIPATION $P_{F(AV)}$ (W)
AVERAGE OUTPUT RECTIFIED CURRENT I_O (A)

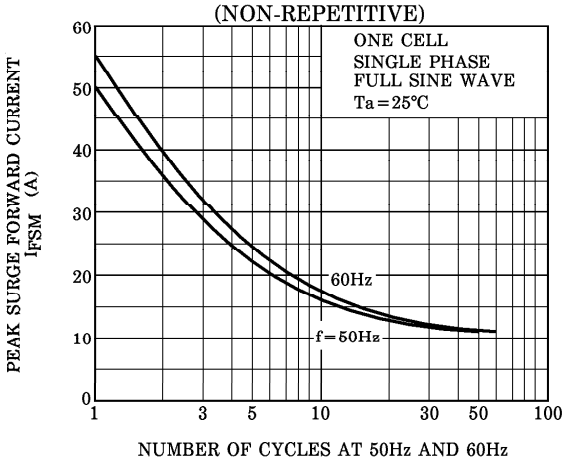

Tc MAX - I_O
10DL2C48A
U10DL2C48A
α=30°
60°
90°
120°
180°
RECTAN-GULAR WAVEFORM (ONE CELL)
CONDUCTION ANGLE
MAXIMUM ALLOWABLE CASE TEMPERATURE Tc MAX (°C)
AVERAGE OUTPUT RECTIFIED CURRENT I_O (A)


Tc MAX - I_O
10FL2C48A
U10FL2C48A
α=30°
60°
90°
120°
180°
RECTAN-GULAR WAVEFORM (ONE CELL)
CONDUCTION ANGLE
MAXIMUM ALLOWABLE CASE TEMPERATURE Tc MAX (°C)
AVERAGE OUTPUT RECTIFIED CURRENT I_O (A)

$r_{th\,(j\text{-}c)} - t$



SURGE FORWARD CURRENT
(NON-REPETITIVE)



$C_j - V_R$ (TYPICAL)

