

## 20DL2C41A,20FL2C41A,20GL2C41A

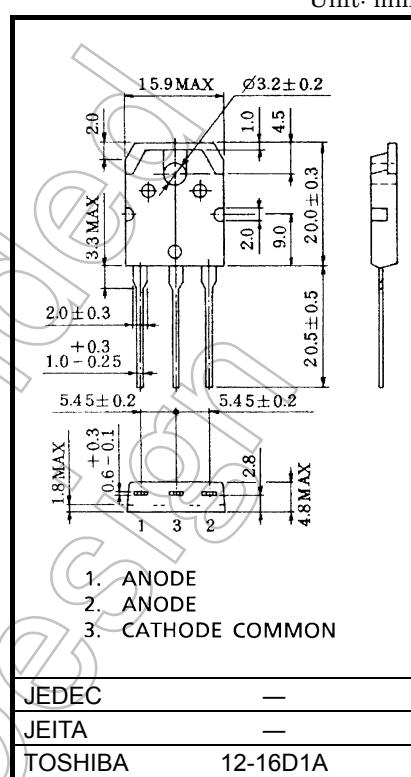
Switching Mode Power Supply Applications

Converter &amp; Chopper Applications

- Repetitive Peak Reverse Voltage:  $V_{RRM} = 200 \text{ V}, 300 \text{ V}, 400 \text{ V}$
- Average Output Rectified Current:  $I_O = 20 \text{ A}$
- Ultra Fast Reverse-Recovery Time:  $t_{rr} = 35 \text{ ns} (\text{Max})$
- Low Switching Losses and Output Noise

Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

CHARACTERISTIC	SYMBOL	RATING	UNIT
Repetitive Peak Reverse Voltage	$V_{RRM}$	200	V
		300	
		400	
Average Output Rectified Current	$I_O$	20	A
Peak One Cycle Surge Forward Current (Non Repetitive)	$I_{FSM}$	100 (50 Hz)	A
		110 (60 Hz)	
Junction Temperature	$T_j$	-40 to 150	°C
Storage Temperature Range	$T_{stg}$	-40 to 150	°C
Screw Torque	-	0.8	N·m

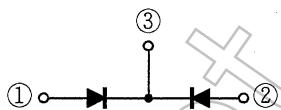


Weight: 4.85 g (typ.)

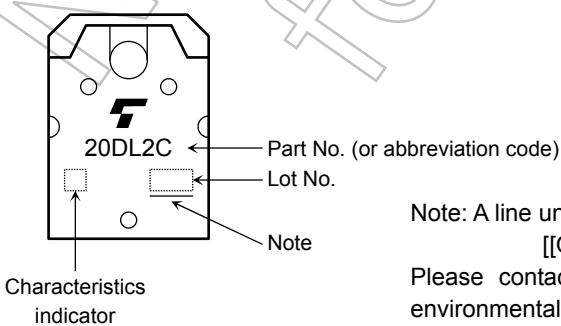
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.

Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc.).

## Polarity



## Marking



Abbreviation Code	Part No.
20DL2C	20DL2C41A
20FL2C	20FL2C41A
20GL2C	20GL2C41A

Note: A line under a Lot No. identifies the indication of product Labels.  
[[G]]/RoHS COMPATIBLE or [[G]]/RoHS [[Pb]]

Please contact your TOSHIBA sales representative for details as to environmental matters such as the RoHS compatibility of Product.

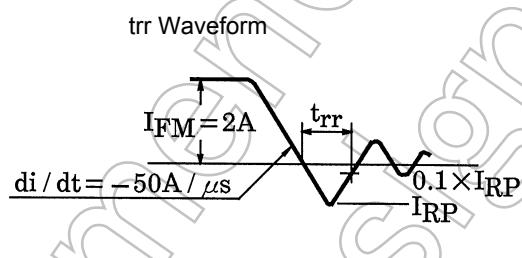
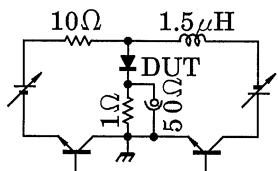
The RoHS is the Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

## Electrical Characteristics (Ta = 25°C)

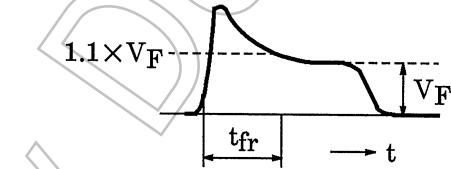
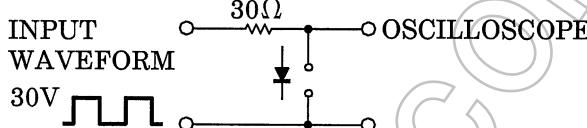
CHARACTERISTIC	SYMBOL	TEST CONDITION	TYP.	MAX	UNIT
Peak Forward Voltage (Note 1)	20DL2C41A	V <sub>FM</sub>	I <sub>FM</sub> = 10 A	—	0.98
	20FL2C41A			—	1.3
	20GL2C41A			—	1.8
Repetitive Peak Reverse Current (Note 1)	I <sub>RRM</sub>	V <sub>RRM</sub> = Rated	—	50	μA
Reverse Recovery Time (Note 1)	t <sub>rr</sub>	I <sub>F</sub> = 2.0 A, di / dt = -50 A / μs	—	35	ns
Forward Recovery Time (Note 1)	t <sub>fr</sub>	I <sub>F</sub> = 1 A	—	100	ns
Thermal Resistance	R <sub>th</sub> (j-c)	Total DC, Junction to Case	—	1.5	°C / W

Note 1: A value applied to one cell.

Note 2: trr Test Circuit



Note 3: t<sub>fr</sub> Test Circuit



## Handling Precaution

The absolute maximum ratings of a semiconductor device are a set of ratings that must not be exceeded, even for a moment. Do not exceed any of these ratings. The following are the general derating methods that we recommend when you design a circuit with a device.

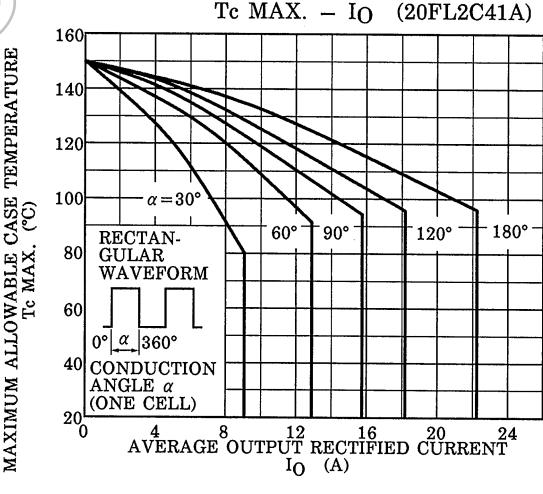
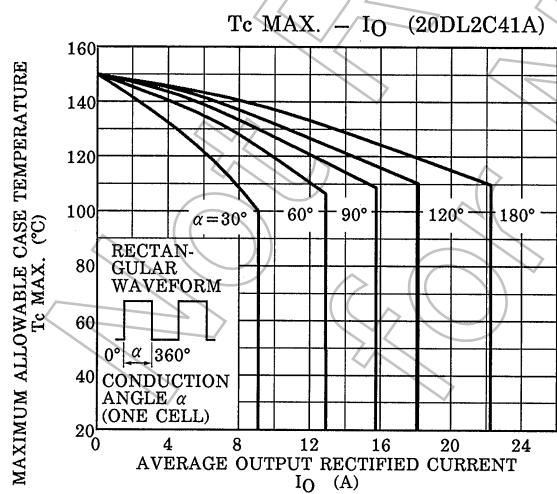
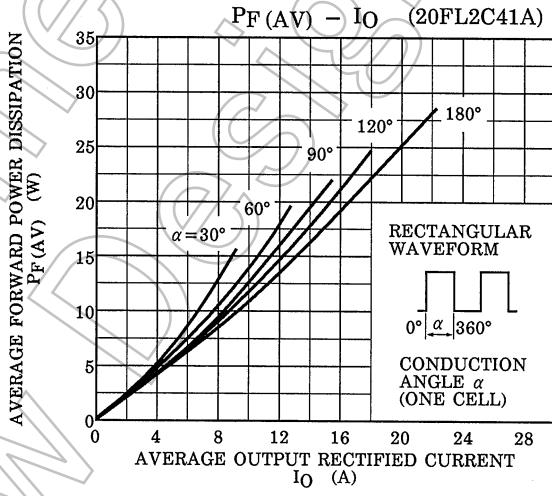
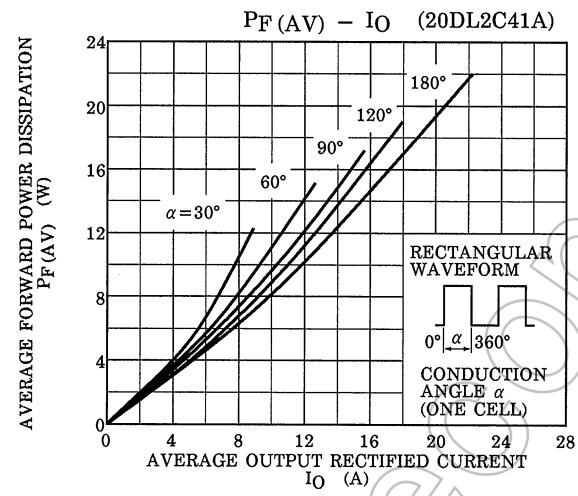
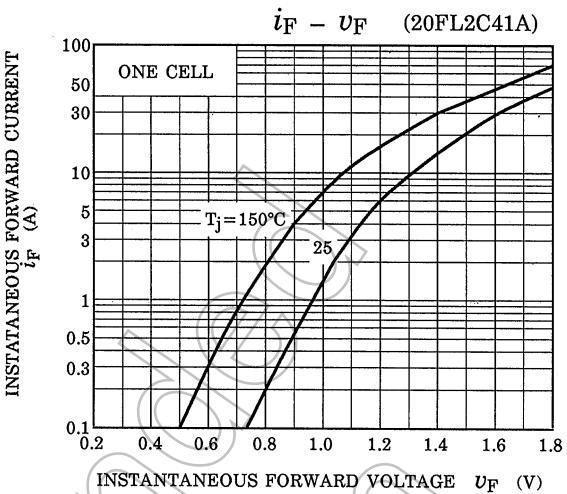
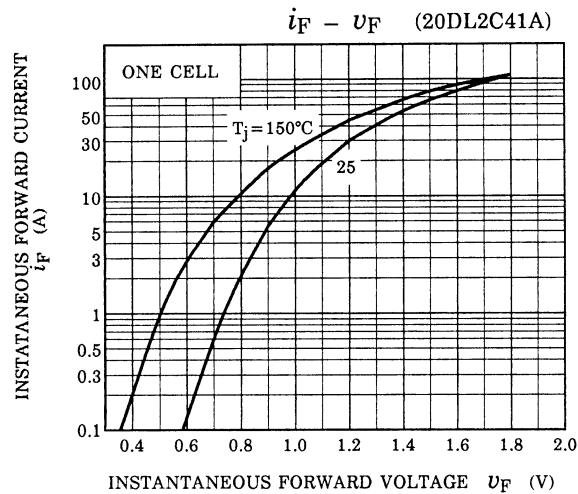
V<sub>RRM</sub>: We recommend that the worst case voltage, including surge voltage, be no greater than 80% of the absolute maximum rating of V<sub>RRM</sub> for a DC circuit and be no greater than 50% of that of V<sub>RRM</sub> for an AC circuit. V<sub>RRM</sub> has a temperature coefficient of 0.1%/°C. Take this temperature coefficient into account designing a device at low temperature.

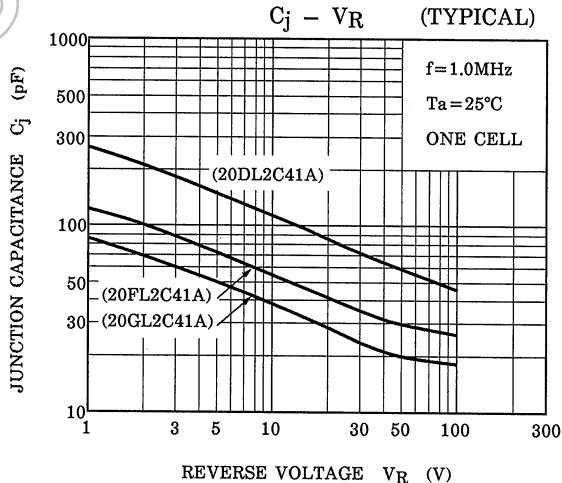
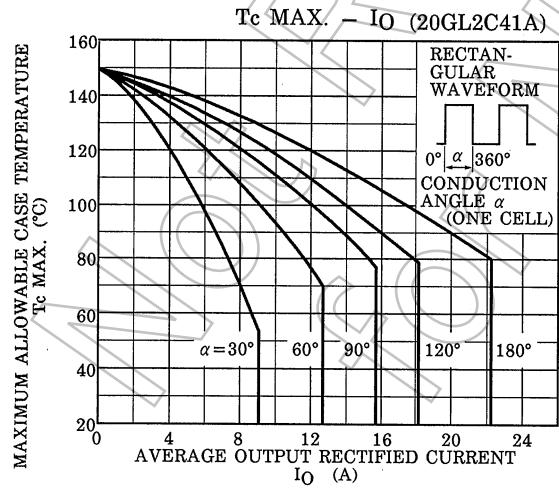
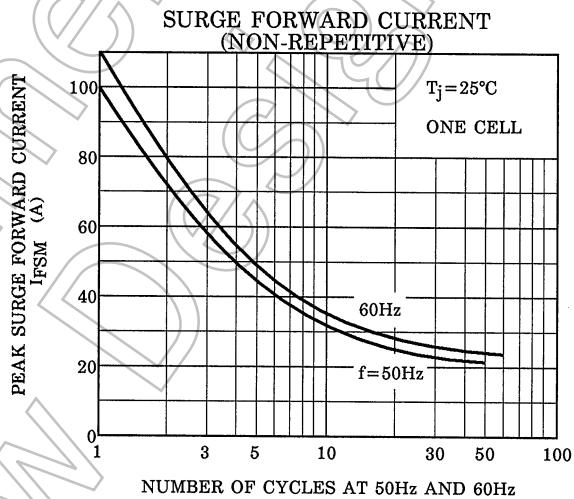
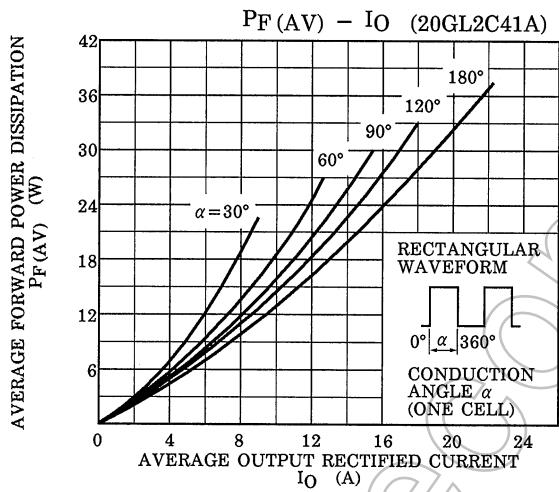
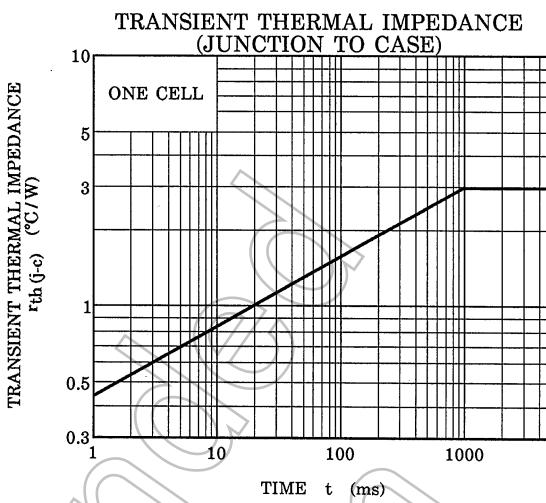
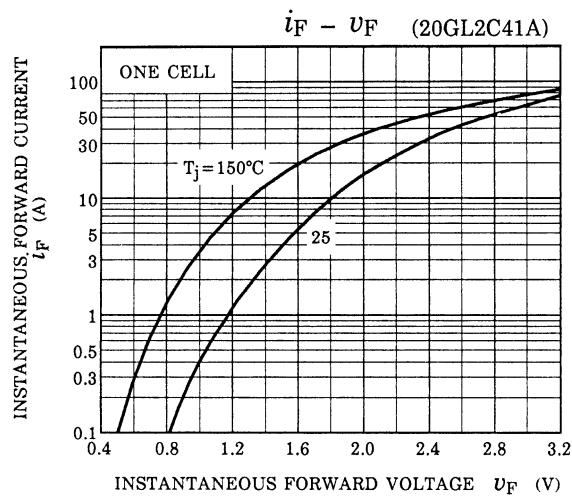
I<sub>O</sub>: We recommend that the worst case current be no greater than 80% of the absolute maximum rating of I<sub>O</sub>. Carry out adequate heat design. If you can't design a circuit with excellent heat radiation, set the margin by using an allowable T<sub>c</sub> max-I<sub>O</sub> curve.

This rating specifies the non-repetitive peak current in one cycle of a 50-Hz sine wave, condition angle 180°. Therefore, this is only applied for an abnormal operation, which seldom occurs during the lifespan of the device.

We recommend that a device be used at a T<sub>j</sub> of below 120°C under the worst load and heat radiation conditions.

Please refer to the Rectifiers databook for further information.





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