

TOSHIBA HIGH EFFICIENCY DIODE STACK (HED) SILICON EPITAXIAL TYPE

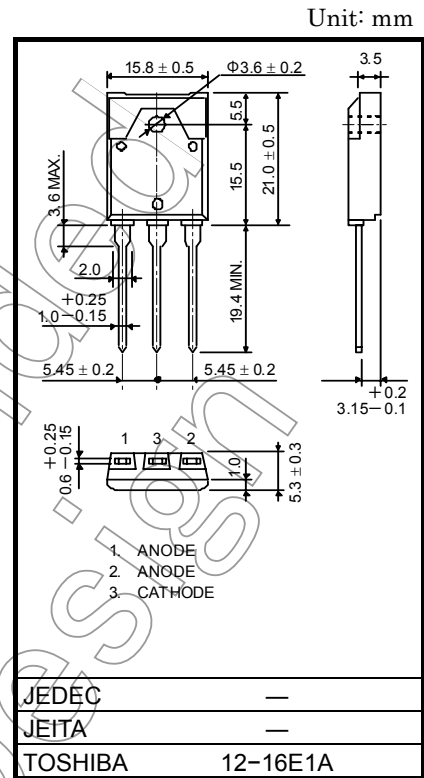
20DL2CZ51A,20FL2CZ51A

Switching Mode Power Supply Applications
 Converter & Chopper Applications

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

ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Repetitive Peak Reverse Voltage	20DL2CZ51A	V_{RRM}	200	V
	20FL2CZ51A		300	
Average Output Rectified Current		I_O	20	A
Peak One Cycle Surge Forward Current (Sine Wave)		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



Weight: 5.9 g (typ.)

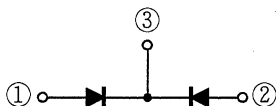
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.)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

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

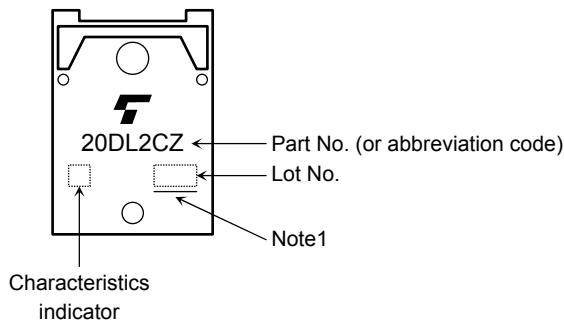
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN	TYP.	MAX	UNIT
Peak Forward Voltage	20DL2CZ51A	V_{FM}	$I_{FM} = 10\text{ A}$	—	—	0.98	V
	20FL2CZ51A			—	—	1.3	
Repetitive Peak Reverse Current		I_{RRM}	$V_{RRM} = \text{Rated}$	—	—	50	μA
Reverse Recovery Time		t_{rr}	$I_F = 2\text{ A}, di/dt = -50\text{ A}/\mu\text{s}$	—	—	35	ns
Forward Recovery Time		t_{fr}	$I_F = 1\text{ A}$	—	—	100	ns
Thermal Resistance		$R_{th(j-c)}$	Total DC, Junction to Case	—	—	2.0	°C/W

$V_{FM}, I_{RRM}, t_{rr}, t_{fr}$: A value applied to one cell.

POLARITY



MARKING



Abbreviation Code	Part No.
20DL2CZ	20DL2CZ51A
20FL2CZ	20FL2CZ51A

Note1: 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.

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.

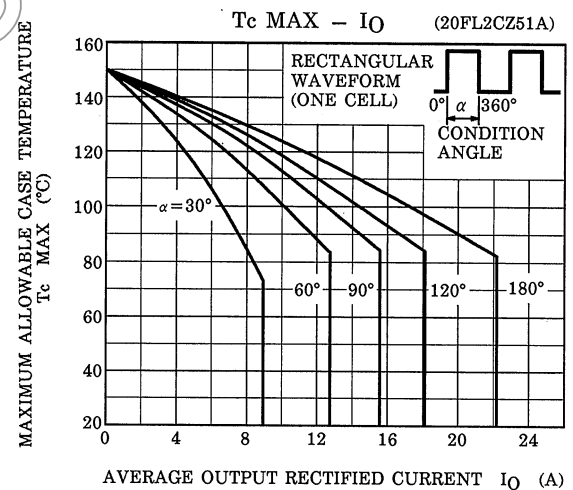
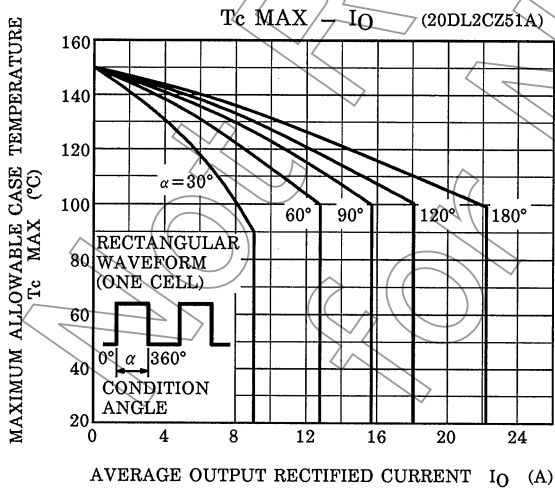
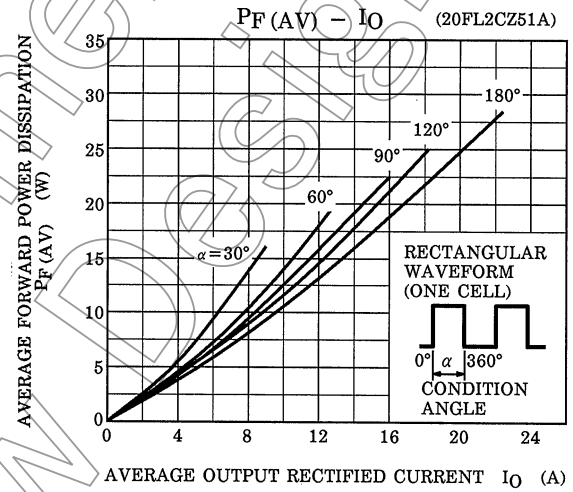
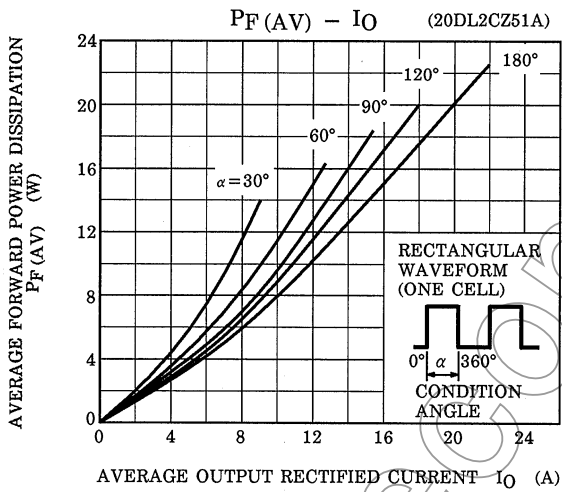
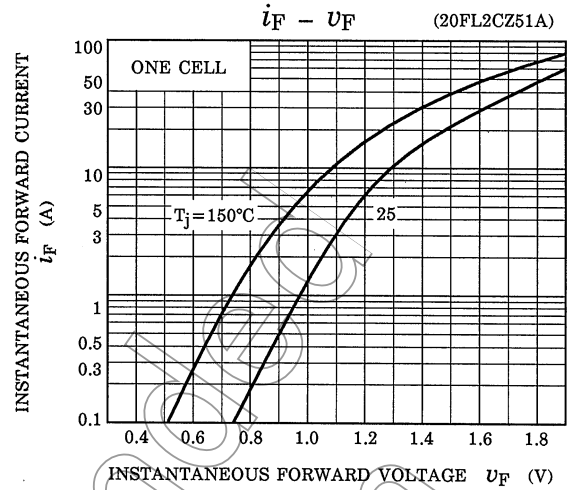
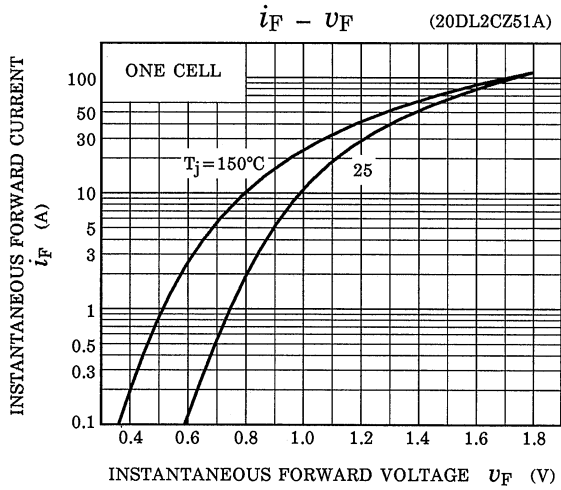
VRRM: We recommend that the worst case voltage, including surge voltage, be no greater than 80% of the absolute maximum rating of VRRM for a DC circuit and be no greater than 50% of that of VRRM for an AC circuit. VRRM has a temperature coefficient of 0.1%/°C. Take this temperature coefficient into account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

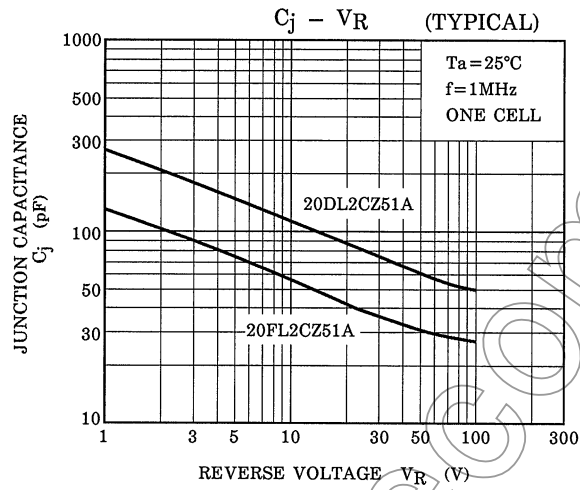
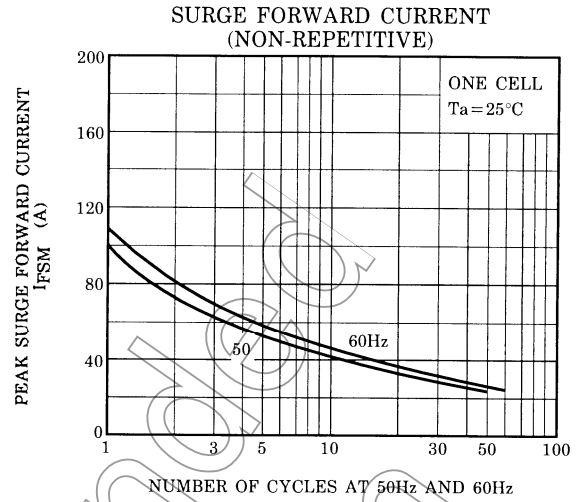
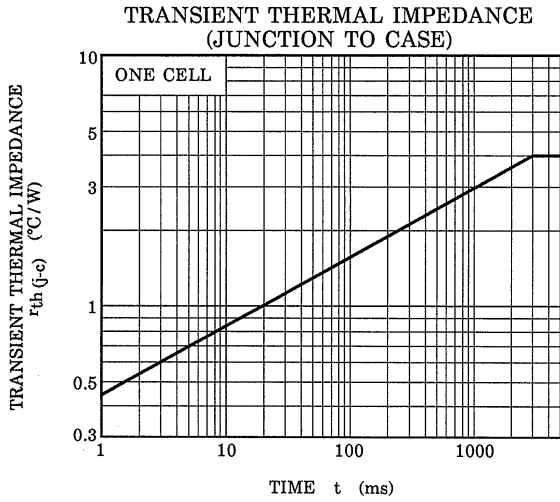
IO: We recommend that the worst case current be no greater than 80% of the absolute maximum rating of IO. Carry out adequate heat design. If you can't design a circuit with excellent heat radiation, set the margin by using an allowable Tc max-IO curve.

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 Tj of below 120°C under the worst load and heat radiation conditions.

Please refer to the Rectifiers databook for further information.





Not Recommended for New Design

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