



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

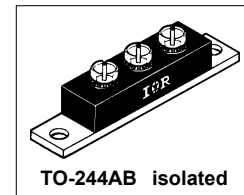


International **IOR** Rectifier

201CMQ... SERIES

SCHOTTKY RECTIFIER

200 Amp



Major Ratings and Characteristics

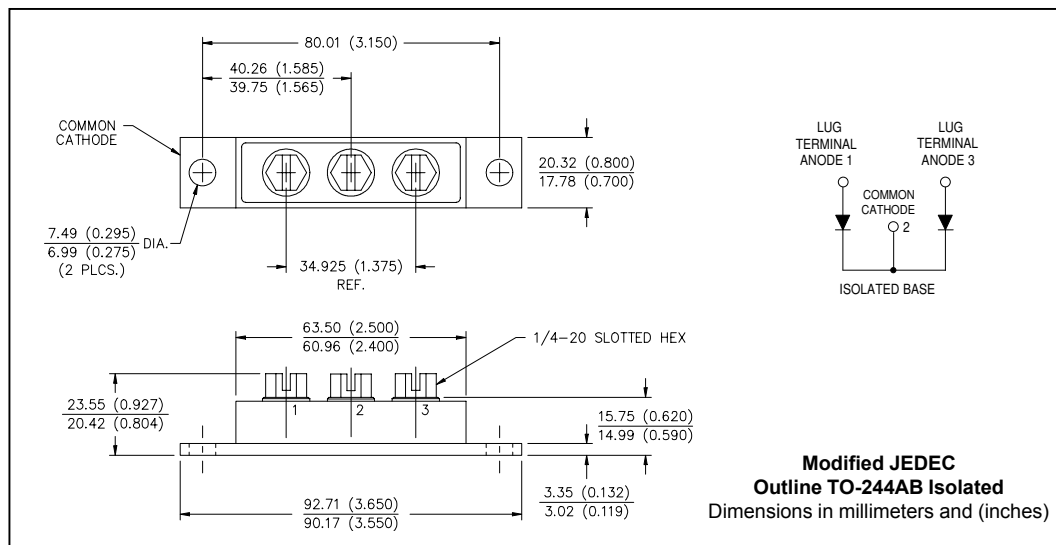
Characteristics	201CMQ...	Units
$I_{F(AV)}$ Rectangular waveform	200	A
V_{RRM}	35 to 45	V
I_{FSM} @ $t_p = 5 \mu s$ sine	16,000	A
V_F @ 100 Apk, $T_J = 125^\circ C$ (per leg)	0.58	V
T_J range	-55 to 175	$^\circ C$

Description/Features

The 201CMQ high current Schottky rectifier module series has been optimized for low reverse leakage at high temperature.

The proprietary barrier technology allows for reliable operation up to $175^\circ C$ junction temperature. Typical applications are in high current switching power supplies, plating power supplies, UPS systems, converters, free-wheeling diodes, welding, and reverse battery protection.

- $175^\circ C$ T_J operation
- Center tap module - Isolated Base
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability



201CMQ... Series

Bulletin PD-2.400 rev. B 08/01

International
IR Rectifier

Voltage Ratings

Part number	201CMQ035	201CMQ040	201CMQ045
V_R Max. DC Reverse Voltage (V)	35	40	45
V_{RWM} Max. Working Peak Reverse Voltage (V)			

Absolute Maximum Ratings

Parameters	201CMQ	Units	Conditions
$I_{F(AV)}$ Max. Average Forward (Per Leg) Current * See Fig. 5 (Per Device)	100 200	A	50% duty cycle @ $T_C = 121^\circ\text{C}$, rectangular wave form
I_{FSM} Max. Peak One Cycle Non-Repetitive Surge Current (Per Leg) * See Fig. 7	16,000 3200	A	5 μs Sine or 3 μs Rect. pulse 10ms Sine or 6ms Rect. pulse Following any rated load condition and with rated V_{RRM} applied
E_{AS} Non-Repetitive Avalanche Energy (Per Leg)	135	mJ	$T_J = 25^\circ\text{C}$, $I_{AS} = 20$ Amps, $L = 0.67$ mH
I_{AR} Repetitive Avalanche Current (Per Leg)	20	A	Current decaying linearly to zero in 1 μsec Frequency limited by T_J max. $V_A = 1.5 \times V_R$ typical

Electrical Specifications

Parameters	201CMQ	Units	Conditions
V_{FM} Max. Forward Voltage Drop (Per Leg) * See Fig. 1 (1)	0.67	V	@ 100A $T_J = 25^\circ\text{C}$
	0.81	V	@ 200A
	0.58	V	@ 100A $T_J = 125^\circ\text{C}$
	0.71	V	@ 200A
I_{RM} Max. Reverse Leakage Current (Per Leg) * See Fig. 2 (1)	10	mA	$T_J = 25^\circ\text{C}$
	90	mA	$T_J = 125^\circ\text{C}$ $V_R = \text{rated } V_R$
C_T Max. Junction Capacitance (Per Leg)	5200	pF	$V_R = 5V_{DC}$, (test signal range 100Khz to 1Mhz) 25°C
L_S Typical Series Inductance (Per Leg)	7.0	nH	From top of terminal hole to mounting plane
dv/dt Max. Voltage Rate of Change	10000	V/ μs	(Rated V_R)
V_{RMS} Insulation Voltage	1000	V	

(1) Pulse Width < 300 μs , Duty Cycle <2%

Thermal-Mechanical Specifications

Parameters		201CMQ	Units	Conditions
T _J	Max. Junction Temperature Range	-55 to 175	°C	
T _{stg}	Max. Storage Temperature Range	-55 to 175	°C	
R _{thJC}	Max. Thermal Resistance Junction to Case (Per Leg)	0.70	°C/W	DCoperation * See Fig. 4
R _{thJC}	Max. Thermal Resistance Junction to Case (Per Package)	0.35	°C/W	DCoperation
R _{thCS}	Typical Thermal Resistance, Case to Heatsink	0.10	°C/W	Mounting surface , smooth and greased
wt	Approximate Weight	79 (2.80)	g (oz.)	
T	Mounting Torque	Min. 24 (20)	Kg-cm (lbf-in)	
		Max. 35 (30)		
	Mounting Torque Center Hole	Typ. 13.5 (12)		
	Terminal Torque	Min. 35 (30)		
		Max. 46 (40)		
Case Style		TO-244AB Isolated	Modified JEDEC	

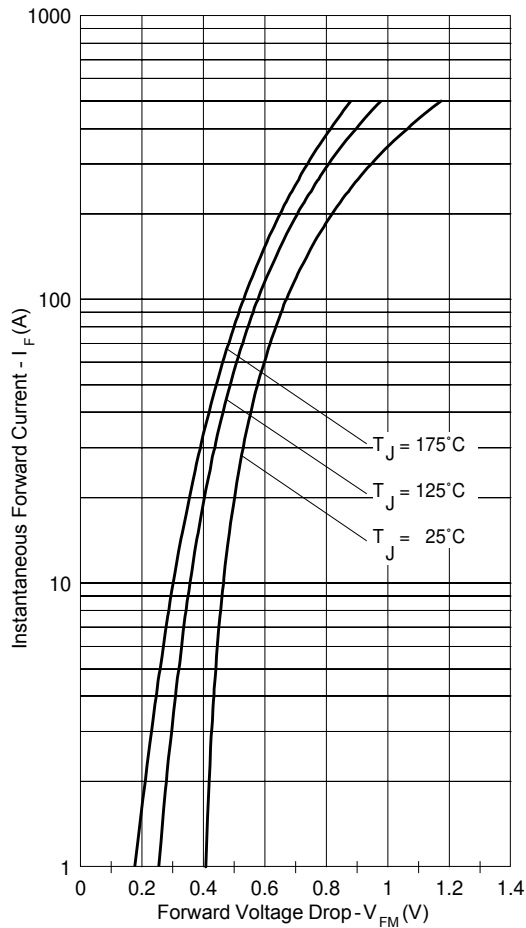


Fig. 1 - Max. Forward Voltage Drop Characteristics

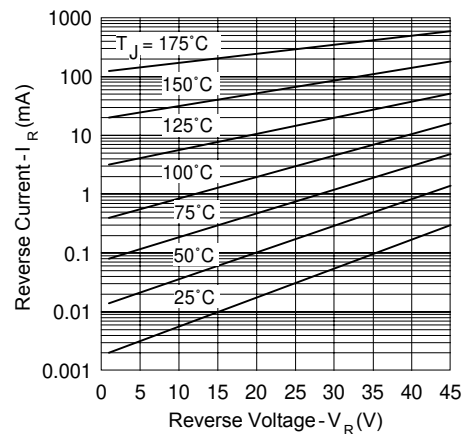


Fig. 2 - Typical Values Of Reverse Current Vs. Reverse Voltage

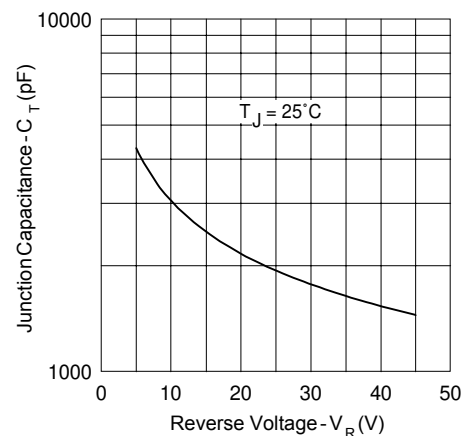


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage

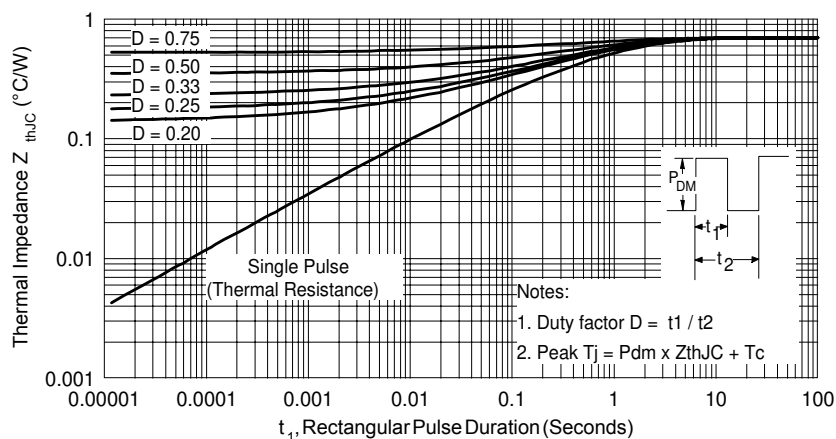


Fig. 4 - Max. Thermal Impedance Z_{thJC} Characteristics (Per Leg)

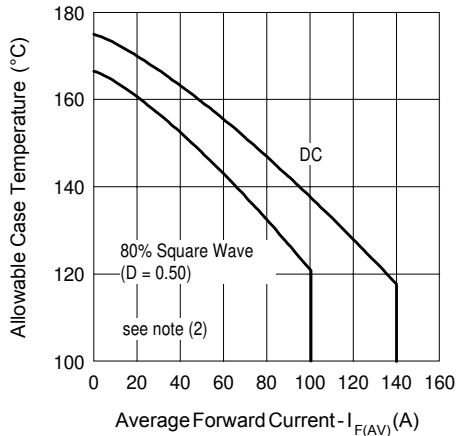


Fig. 5 - Max. Allowable Case Temperature Vs. Average Forward Current

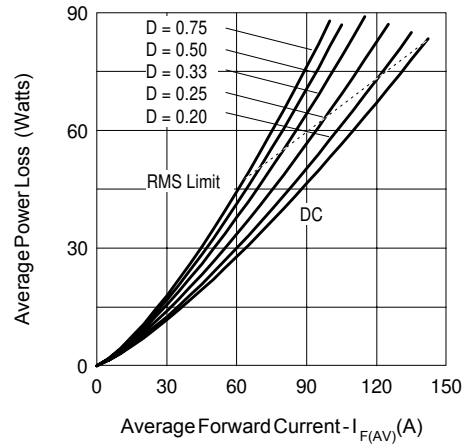


Fig. 6 - Forward Power Loss Characteristics

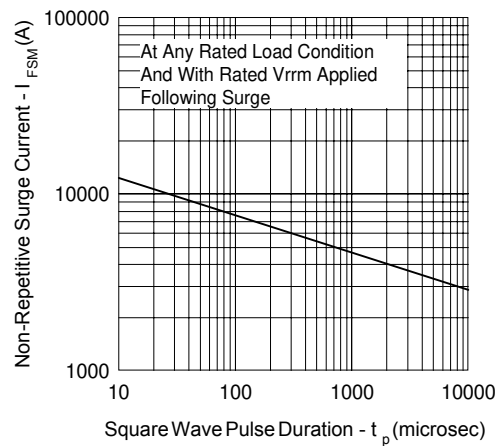


Fig. 7 - Max. Non-Repetitive Surge Current

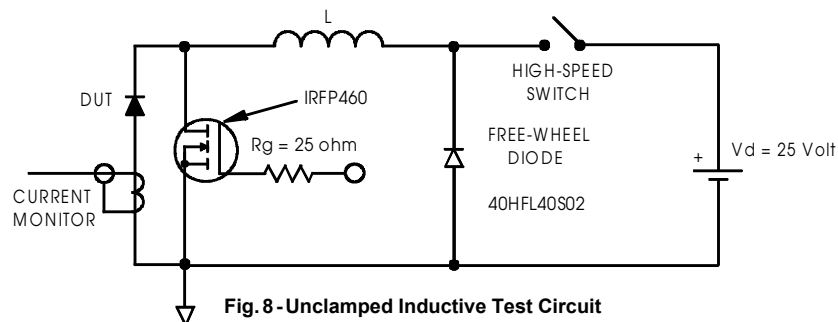


Fig. 8 - Unclamped Inductive Test Circuit

(2) Formula used: $T_C = T_J - (P_d + P_{d_{REV}}) \times R_{thJC}$

P_d = Forward Power Loss = $I_{F(AV)} \times V_{FM} @ (I_{F(AV)} / D)$ (see Fig. 6);

$P_{d_{REV}}$ = Inverse Power Loss = $V_{R1} \times I_R (1 - D)$; $I_R @ V_{R1} = 80\%$ rated V_R

Ordering Information Table

Device Code				
201	C	M	Q	045
①	②	③	④	⑤
1	-	Current Rating: 200A		
2	-	Common Cathode		
3	-	Module		
4	-	Schottky Q Series		
5	-	Voltage Rating: _____		
				035 = 35V 040 = 40V 045 = 45V

Data and specifications subject to change without notice.
This product has been designed and qualified for Industrial Level.
Qualification Standards can be found on IR's Web site.

International
IOR Rectifier

IR WORLD HEADQUARTERS: 233 Kansas St., El Segundo, California 90245, USA Tel: (310) 252-7105
TAC Fax: (310) 252-7309
Visit us at www.irf.com for sales contact information. 08/01