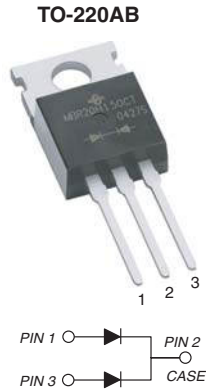




**THE DATASHEET OF
M6045C-E3/45**



Dual Common Cathode Schottky Rectifier



FEATURES

- Power pack
- Guardring for overvoltage protection
- Lower power losses, high efficiency
- Low forward voltage drop
- High forward surge capability
- High frequency operation
- Solder dip 275 °C max., 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

TYPICAL APPLICATIONS

For use in low voltage, high frequency rectifier of switching mode power supplies, freewheeling diodes, Or-ing diodes, DC/DC converters, or polarity protection application.

MECHANICAL DATA

Case: TO-220AB

Molding compound meets UL 94 V-0 flammability rating
Base P/N-E3 - RoHS-compliant, commercial grade

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test

Polarity: As marked

Mounting Torque: 10 in-lbs maximum

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2 x 30 A
V_{RRM}	35 V, 45 V, 60 V
I_{FSM}	320 A
V_F	0.51 V, 0.56 V
$T_J \text{ max.}$	150 °C
Package	TO-220AB
Diode variations	Common cathode

MAXIMUM RATINGS ($T_A = 25\text{ °C}$ unless otherwise noted)					
PARAMETER	SYMBOL	M6035C	M6045C	M6060C	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	35	45	60	V
Maximum average forward rectified current at (fig.1)	$I_{F(AV)}$	total device		60	A
		per diode		30	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	I_{FSM}	320			A
Peak repetitive reverse current per diode at $t_p = 2\ \mu\text{s}$, 1 kHz per diode	I_{RRM}	1.0			A
Voltage rate of change (rated V_R)	dV/dt	10 000			V/ μs
Operating junction and storage temperature range	T_J, T_{STG}	-65 to +150			°C



ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITIONS	M6035C	M6045C	M6060C		UNIT		
			TYP.	MAX.	TYP.	MAX.			
Instantaneous forward voltage per diode	$V_F^{(1)}$	$I_F = 10\text{ A}$	$T_J = 25\text{ }^\circ\text{C}$	0.42	-	0.43	-	V	
				$I_F = 20\text{ A}$	0.49	-	0.52		-
				$I_F = 30\text{ A}$	0.55	0.61	0.59		0.65
		$I_F = 10\text{ A}$	$T_J = 125\text{ }^\circ\text{C}$	0.31	-	0.33	-		
				$I_F = 20\text{ A}$	0.42	-	0.47		-
				$I_F = 30\text{ A}$	0.51	0.56	0.56		0.61
Reverse current per diode	$I_R^{(2)}$	V_R	$T_J = 25\text{ }^\circ\text{C}$	140	700	180	700	μA	
			$T_J = 125\text{ }^\circ\text{C}$	106	175	140	175	mA	
Typical junction capacitance	C_J	4.0 V, 1 MHz	1170	-	970	-	pF		

Notes

- (1) Pulse test: 300 μs pulse width, 1 % duty cycle
- (2) Pulse test: Pulse width $\leq 40\text{ ms}$

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	M6035C	M6045C	M6060C	UNIT
Typical thermal resistance per diode	$R_{\theta JC}$		2.0		$^\circ\text{C/W}$

ORDERING INFORMATION (Example)

PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
M6045C-E3/45	2.068	45	50/tube	Tube

RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

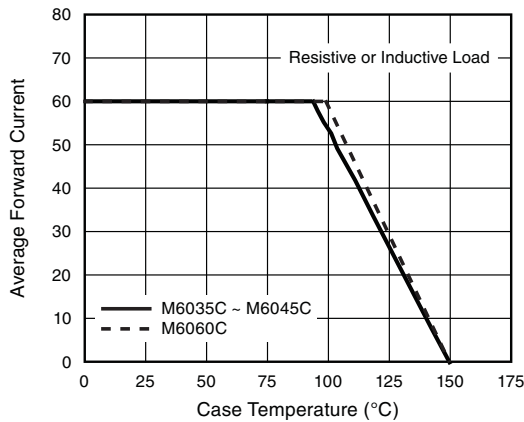


Fig. 1 - Maximum Forward Current Derating Curve

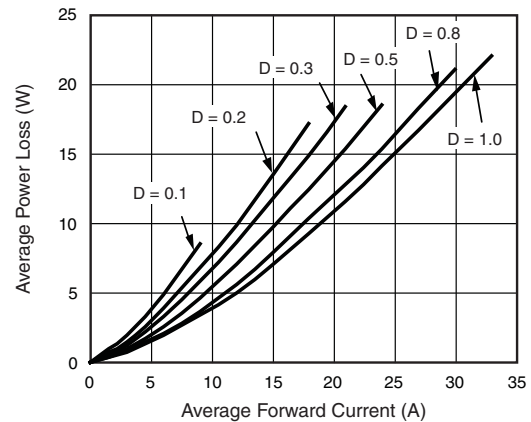


Fig. 2 - Forward Power Loss Characteristics Per Diode

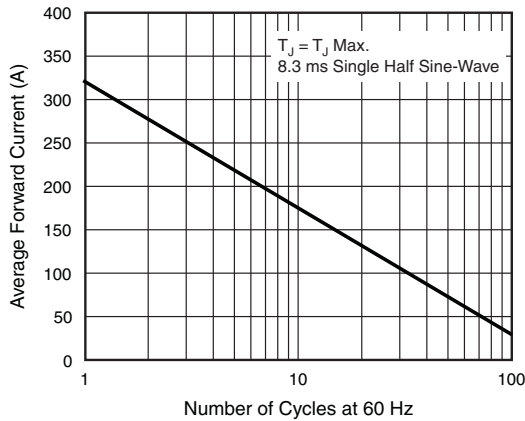


Fig. 3 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

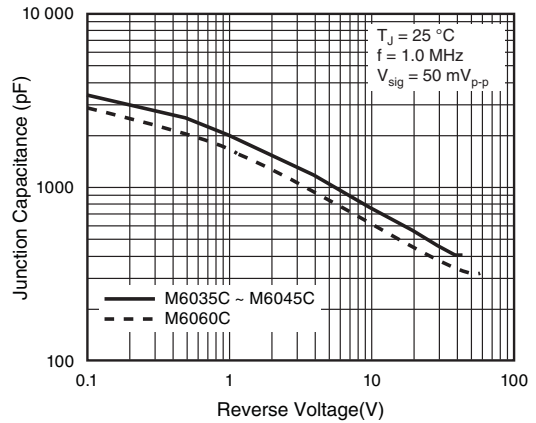


Fig. 6 - Typical Junction Capacitance Per Diode

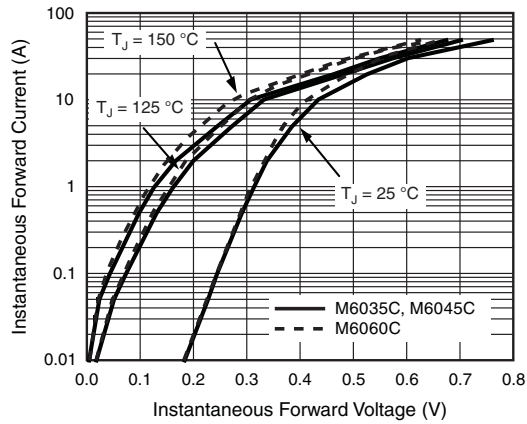


Fig. 4 - Typical Instantaneous Forward Characteristics Per Diode

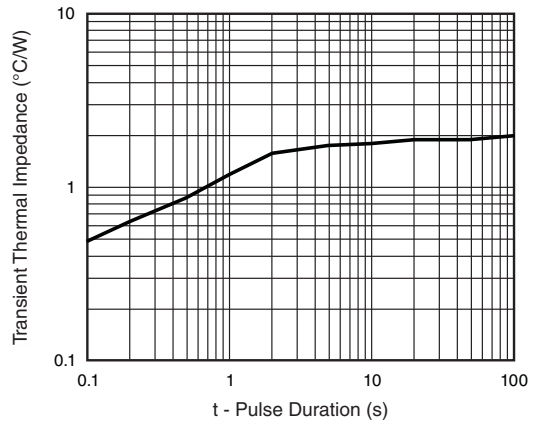


Fig. 7 - Typical Transient Thermal Impedance Per Diode

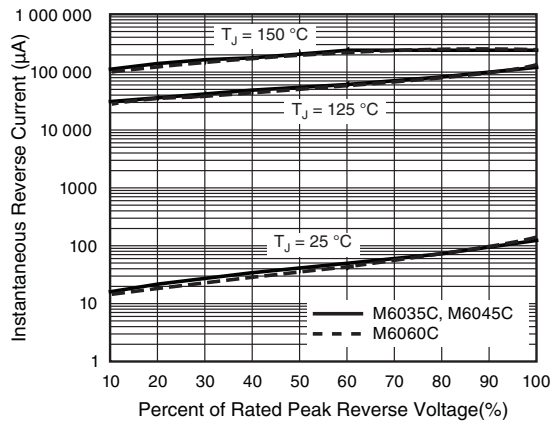
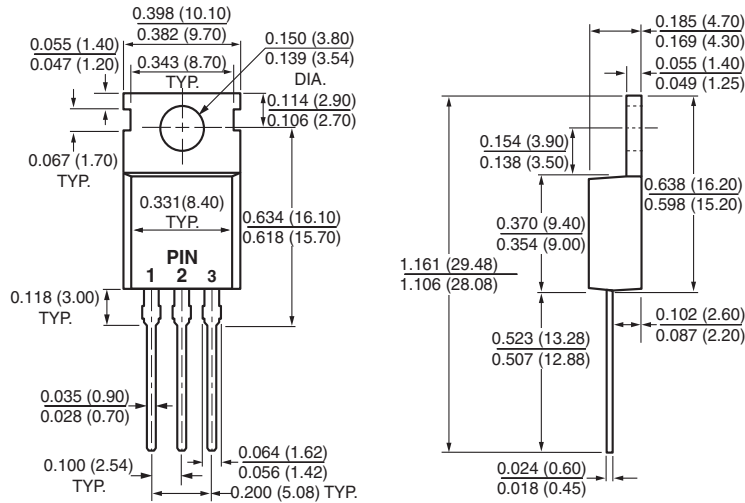


Fig. 5 - Typical Reverse Characteristics Per Diode



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-220AB





Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.

Mouser Electronics

Authorized Distributor


Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Vishay:

[M6045C-E3/45](#) [M6060C-E3/45](#) [M6035C-E3/45](#)

Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

 [View M6045C-E3/45 on WIN SOURCE](#)

 [Vishay Information](#)

Optimize Your Supply Chain with WIN SOURCE Solutions

-  Global Sourcing Solution
-  Obsolete Management
-  Cost Control Management
-  Shortage Management
-  Alternative Solution
-  Excess Inventory Management