RoHS

COMPLIANT

www.vishay.com

Vishay General Semiconductor

Dual Common Cathode Ultrafast Rectifier



PRIMARY CHARACTERISTICS								
I _{F(AV)}	30 A							
V _{RRM}	50 V, 100 V, 150 V, 200 V, 300 V, 400 V, 500 V, 600 V							
I _{FSM}	300 A							
t _{rr}	35 ns, 50 ns							
V_F at I_F = 15 A	0.95 V, 1.3 V, 1.5 V							
T _J max.	150 °C							
Package	TO-247AD (TO-3P)							
Diode variations	Dual common cathode							

FEATURES

- Power pack
- · Glass passivated pellet chip junction
- Ultrafast recovery time
- · Low switching losses, high efficiency
- Low thermal resistance
- · High forward surge capability
- Solder dip 260 °C, 40 s
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

TYPICAL APPLICATIONS

For use in high frequency rectifier of switching mode power supplies, inverters, freewheeling diodes, DC/DC converters, and other power switching application.

MECHANICAL DATA

Case: TO-247AD (TO-3P) 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 JESD22-B102

E3 suffix meets JESD 201 class 1A whisker test

Polarity: As marked

Mounting Torque: 10 in-lbs max.

MAXIMUM RATINGS ($T_A = 25 \text{ °C}$ unless otherwise noted)										
PARAMETER	SYMBOL	FEP 30AP	FEP 30BP	FEP 30CP	FEP 30DP	FEP 30FP	FEP 30GP	FEP 30HP	FEP 30JP	UNIT
Maximum repetitive peak reverse voltage	V _{RRM}	50	100	150	200	300	400	500	600	V
Maximum RMS voltage	V _{RMS}	35	70	105	140	210	280	350	420	V
Maximum DC blocking voltage	V _{DC}	50	100	150	200	300	400	500	600	V
Maximum average forward rectified current at T_{C} = 100 °C	I _{F(AV)}	30						А		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	I _{FSM}	300						А		
Operating storage and temperature range	T _J , T _{STG}	-55 to +150							°C/W	

www.vishay.com

SHAY

FEP30xP-E3

Vishay General Semiconductor

ELECTRICAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)											
PARAMETER	TEST CONDITIONS	SYMBOL	FEP 30AP	FEP 30BP	FEP 30CP	FEP 30DP	FEP 30FP	FEP 30GP	FEP 30HP	FEP 30JP	UNIT
Maximum instantaneous forward voltage per diode	15.0 A	V _F	0.95 1.3 1.5						V		
Maximum DC reverse current at	T _C = 25 °C		10								
rated DC blocking voltage per diode	T _C = 100 °C	I _R			50	500				μA	
Maximum reverse recovery time per diode	I _F = 0.5 A, I _R = 1.0 A, I _{rr} = 0.25 A	t _{rr}	35 50						ns		
Typical junction capacitance per diode	4.0 V, 1 MHz	CJ	175 145					pF			

THERMAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)										
PARAMETER	SYMBOL FEP 30AP FEP 30BP FEP 30CP FEP 30CP FEP 30DP FEP 30FP FEP 30GP FEP 30HP FEP 30JP Image: State						UNIT			
Typical thermal resistance per diode	R _{0JC} ⁽¹⁾	1.0						°C/W		

Note

⁽¹⁾ Thermal resistance from junction to case per diode mounted on heatsink

ORDERING INFORMATION (Example)										
PACKAGE	PREFERRED P/N UNIT WEIGHT (g) PACKAGE CODE BASE QUANTITY DELIVERY MODE									
TO-247AD	FEP30JP-E3/45	6.15	30	30/tube	Tube					



Vishay General Semiconductor

RATINGS AND CHARACTERISTICS CURVES ($T_A = 25$ °C unless otherwise noted)

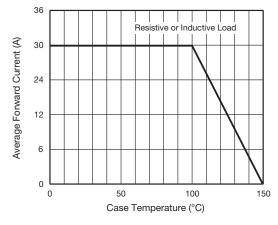


Fig. 1 - Forward Current Derating Curve

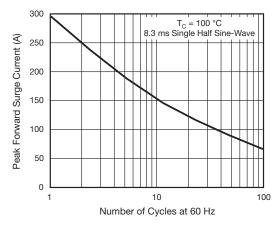


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

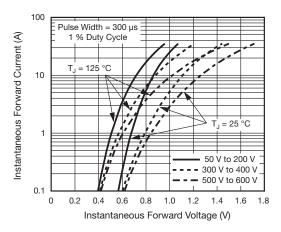


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

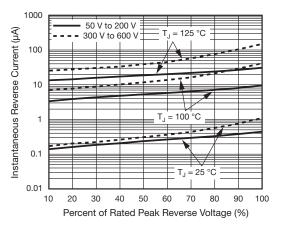


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

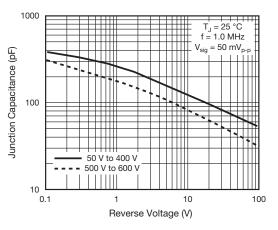


Fig. 5 - Typical Junction Capacitance Per Diode

Revision: 23-Feb-16

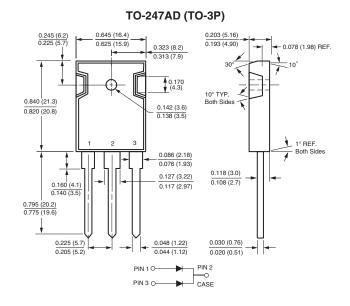
3

For technical questions within your region: <u>DiodesAmericas@vishay.com</u>, <u>DiodesAsia@vishay.com</u>, <u>DiodesEurope@vishay.com</u> THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT <u>www.vishay.com/doc?91000</u>



Vishay General Semiconductor

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





Vishay

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:

 FEP30AP-E3/45
 FEP30BP-E3/45
 FEP30CP-E3/45
 FEP30DP-E3/45
 FEP30GP-E3/45
 FEP30GP-E3/45

 E3/45
 FEP30JP-E3/45
 FEP30JP-E3/45
 FEP30JP-E3/45
 FEP30JP-E3/45
 FEP30JP-E3/45