



# DHE0.5A~DHE0.5M

## Surface Mount Ultra Fast Rectifiers

### Features

- Low profile space
- Ideal for automated placement
- Glass passivated chip junctions
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- High temperature soldering:  
260°C/10 seconds at terminals
- Component in accordance to  
RoHS 2002/95/1 and WEEE 2002/96/EC



### Mechanical Date

- **Case:** JEDEC SOD-123FL molded plastic body over glass passivated chip
- **Terminals:** Solder plated, solderable per J-STD-002B and JESD22-B102D
- **Polarity:** Laser band denotes cathode end
- **Weight:** 0.017gram

### Major Ratings and Characteristics

$I_{F(AV)}$	0.5A
$V_{RRM}$	50 V to 1000 V
$I_{FSM}$	15 A
$I_R$	5 $\mu$ A
$V_F$	1.0V, 1.3V, 1.7V
$T_j$ max.	150 °C

### Maximum Ratings & Thermal Characteristics

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

Items	Symbol	DHE 0.5A	DHE 0.5B	DHE 0.5D	DHE 0.5E	DHE 0.5G	DHE 0.5J	DHE 0.5K	DHE 0.5M	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	300	400	600	800	1000	V
Maximum RMS voltage	$V_{RMS}$	35	70	140	210	280	420	560	700	V
Maximum DC blocking voltage	$V_{DC}$	50	100	200	300	400	600	800	1000	V
Maximum average forward rectified current	$I_{F(AV)}$	0.5								A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	15								A
Thermal resistance from junction to ambient <sup>(1)</sup>	$R_{\theta JA}$	150								°C/W
Operating junction and storage temperature range	$T_J, T_{STG}$	-55 to +150								°C

Note 1: Mounted on P.C.B. with 0.036 x 0.06" (0.9 x 1.5mm) copper pad areas.

### Electrical Characteristics ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

Items	Test conditions	Symbol	DHE0.5A~0.5D	DHE0.5E~0.5G	DHE0.5J~0.5M	UNIT
Instantaneous forward voltage	$I_F=0.5A^{(2)}$	$V_F$	1.0	1.3	1.7	V
Reverse current	$V_R=V_{DC}$	$I_R$	$T_A=25\text{ }^\circ\text{C}$			$\mu$ A
			$T_A=100\text{ }^\circ\text{C}$			
Reverse recovery time	$I_F = 0.5\text{ A}, I_R = 1.0\text{ A}, I_{rr} = 0.25\text{ A}$	$t_{rr}$	50		75	nS

Note 2: Pulse test:300 $\mu$ s pulse width,1% duty cycle.

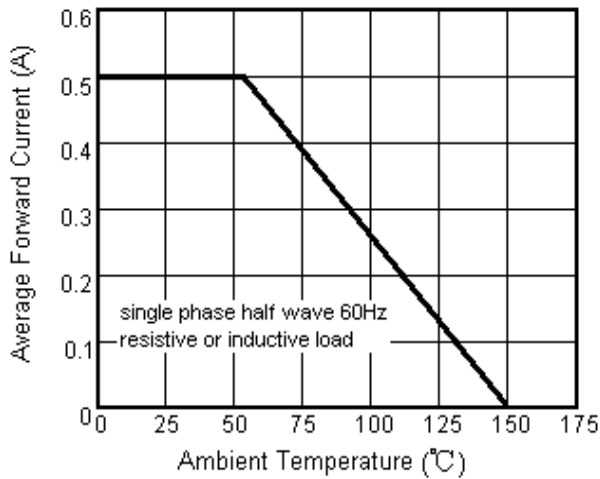


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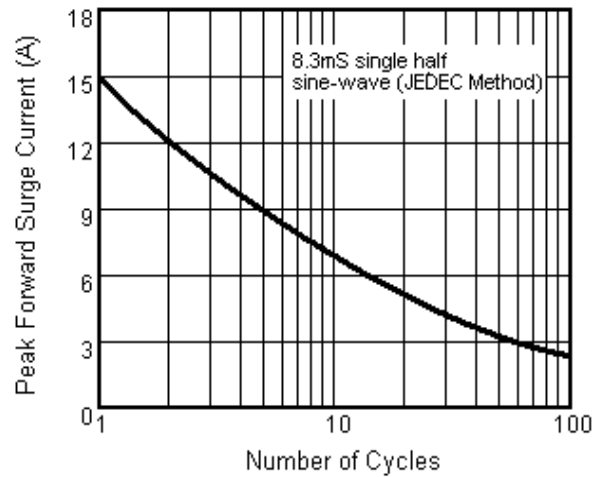
## Surface Mount Ultra Fast Rectifiers

**Characteristic Curves** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

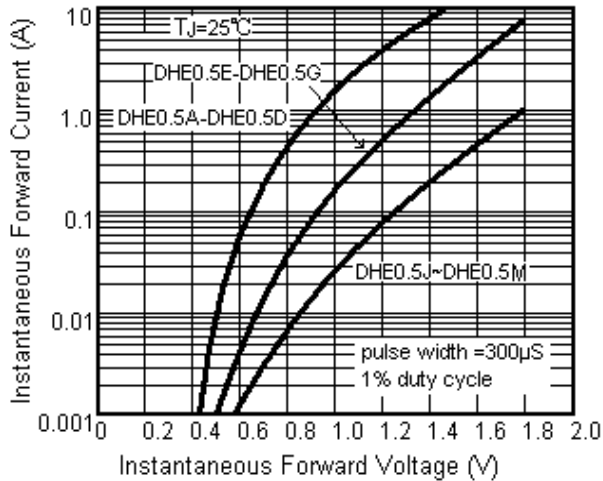
**Fig.1 Forward Current Derating Curve**



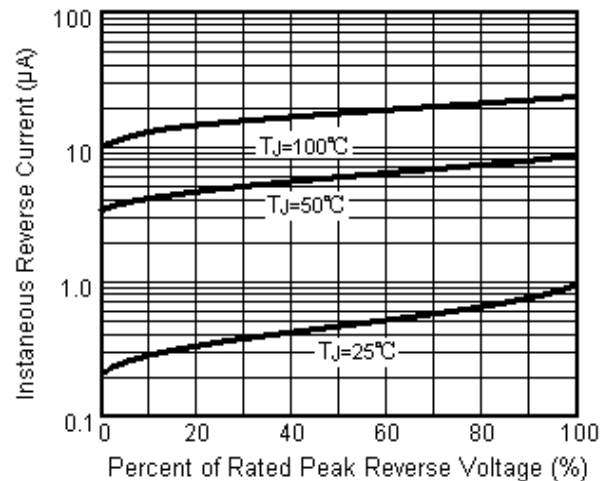
**Fig.2 Maximum Non-Repetitive Peak Forward Surge Current**



**Fig.3 Typical Instantaneous Forward Characteristics**



**Fig.4 Typical Reverse Characteristics**

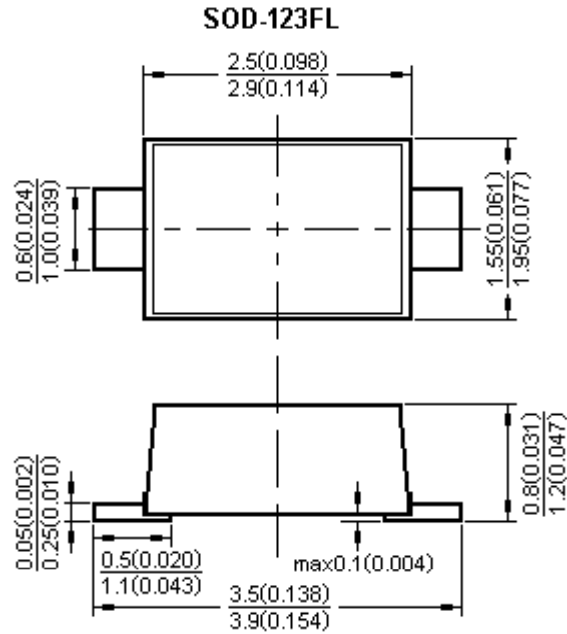




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## Surface Mount Ultra Fast Rectifiers

### Package Outline



Dimensions in millimeters and (inches)

### Notice

- Product is intended for use in general electronics applications.
- Product should be worked less than the ratings; if exceeded, may cause permanent damage or introduce latent failure mechanisms.
- The absolute maximum ratings are rated values and must not be exceeded during operation. The following are the general derating methods you design a circuit with a device.

$I_{F(AV)}$  : We recommend that the worst case current be no greater than 80% .

$I_{FSM}$  : This rating specifies the non-repetitive peak current. This is only applied for an abnormal operation, which the general during the lifespan of the device.

$T_J$  : Derate this rating when using a device in order to ensure high reliability. We recommend that the device be used at a  $T_J$  of below 125°C.

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