

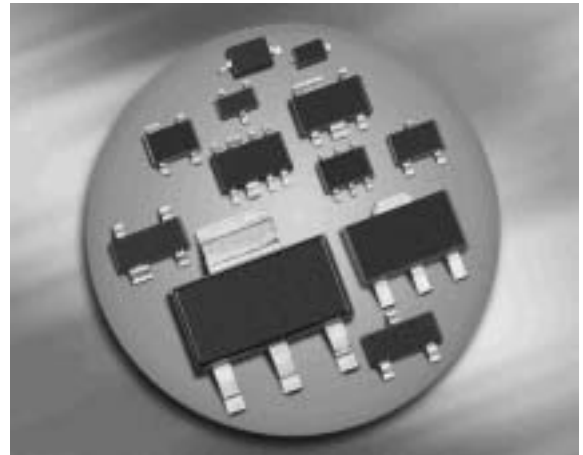


**THE DATASHEET OF  
BAS3007ARPPE6327HTSA1**

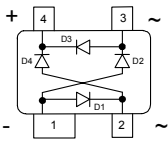


### Low VF Schottky Diode Array

- Reverse voltage: 30 V
- Forward current: 0.9 A
- Small diode quad array for polarity independence, reverse polarity protection and low loss bridge rectification
- Very low forward voltage:  
0.5 V typ. @ 0.7 A (per diode)
- Fast switching
- Pb-free (ROHS compliant) package<sup>1)</sup>
- Qualified according AEC Q101



### BAS3007A-RPP



Type	Package	Configuration	Marking
BAS3007A-RPP	SOT143	bridge	E1s

**Maximum Ratings** at  $T_A = 25^\circ\text{C}$ , unless otherwise specified

Parameter	Symbol	Value	Unit
Diode reverse voltage <sup>2)</sup>	$V_R$	30	V
Peak reverse voltage <sup>2)</sup>	$V_{RM}$	30	
RMS reverse voltage <sup>2)</sup>	$V_{R(RMS)}$	21	
Forward current <sup>2)</sup>	$I_F$		mA
$T_S \leq 46^\circ\text{C}$		900	
$T_S \leq 82^\circ\text{C}$		700	
Non-repetitive peak surge forward current ( $t \leq 10$ ms)	$I_{FSM}$	5	A
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-65 ... 150	

<sup>1</sup>Pb-containing package may be available upon special request

<sup>2</sup>For  $T_A > 25^\circ\text{C}$  the derating of  $V_R$  and  $I_F$  has to be considered. Please refer to the attached curves.

**Thermal Resistance**

Parameter	Symbol	Value	Unit
Junction - soldering point <sup>1)</sup>	$R_{thJS}$	$\leq 95$	K/W

**Electrical Characteristics at  $T_A = 25^\circ\text{C}$ , unless otherwise specified**

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

**DC Characteristics**

Reverse current (per diode) <sup>2)</sup>	$I_R$				$\mu\text{A}$
$V_R = 12\text{ V}$		-	-	30	
$V_R = 30\text{ V}$		-	-	350	
Forward voltage (per diode) <sup>2)3)</sup>	$V_F$				V
$I_F = 100\text{ mA}$		-	0.35	0.4	
$I_F = 350\text{ mA}$		-	0.4	0.5	
$I_F = 500\text{ mA}$		-	0.45	0.55	
$I_F = 700\text{ mA}$		-	0.5	0.6	
$I_F = 900\text{ mA}$		-	0.6	0.7	

**AC Characteristics**

Diode capacitance (per diode)	$C_T$	-	9	15	$\mu\text{F}$
$V_R = 5\text{ V}, f = 1\text{ MHz}$					

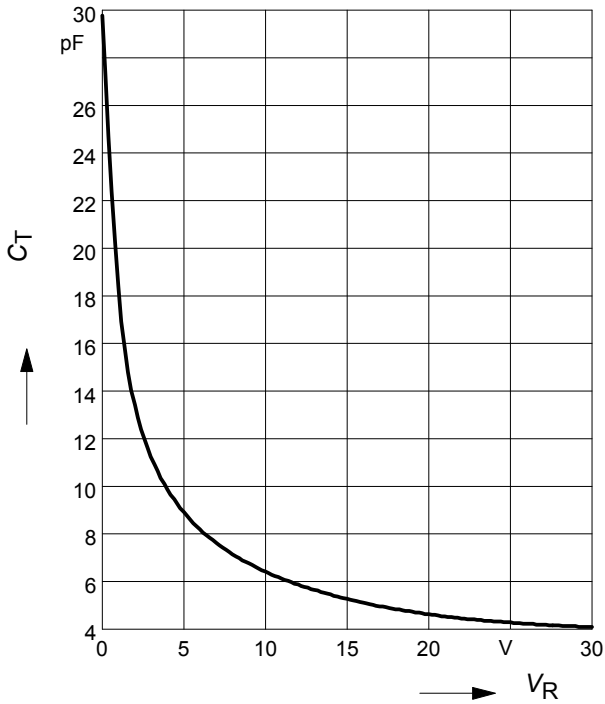
<sup>1)</sup>For calculation of  $R_{thJA}$  please refer to Application Note Thermal Resistance

<sup>2)</sup>Pulsed test,  $t_p = 300\ \mu\text{s}$ ;  $D = 0.01$

<sup>3)</sup>When used as shown for Reverse Polarity Protection (RPP, see page 4), the voltage available to the circuit being protected will be two diode drops below the power supply voltage. In other words, the supply current will pass through two diodes.

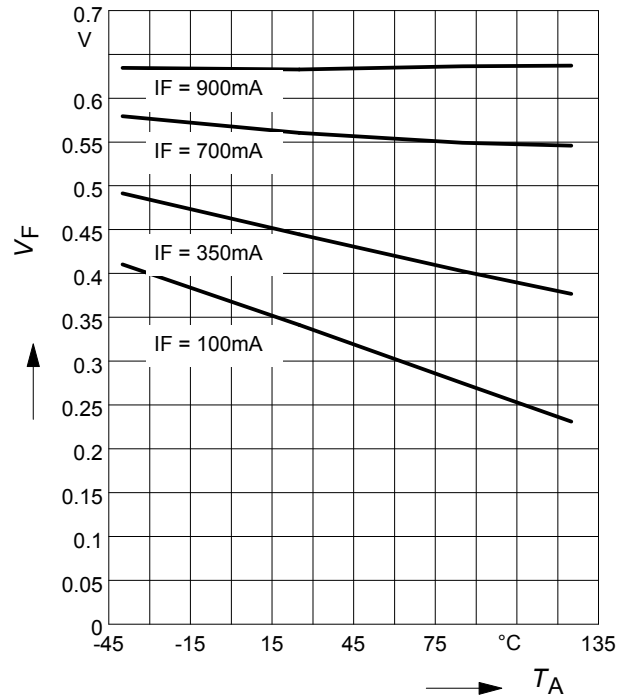
**Diode capacitance  $C_T = f(V_R)$**

$f = 1\text{MHz}$  (per diode)



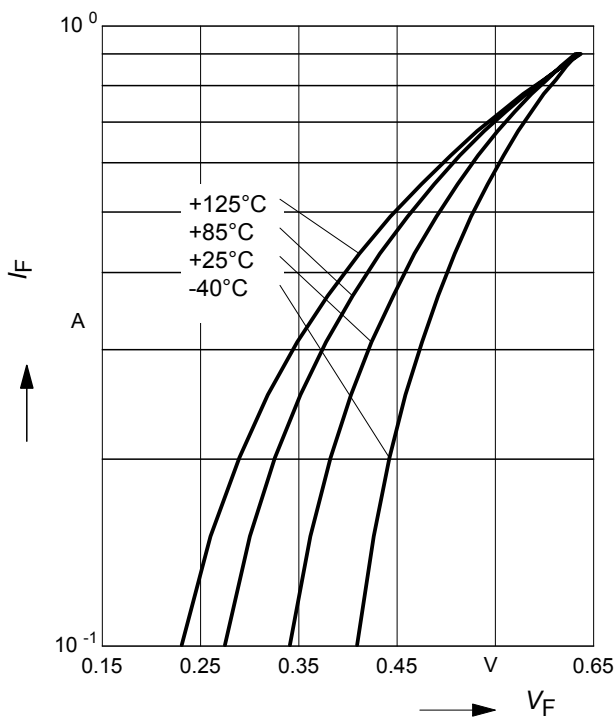
**Forward Voltage  $V_F = f(T_A)$**

$I_F = \text{Parameter}$  (per diode)



**Forward current  $I_F = f(V_F)$**

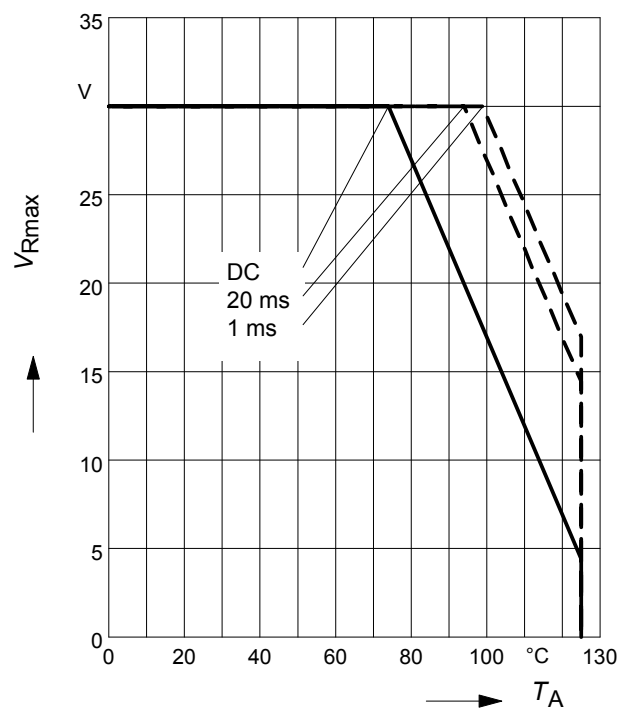
$T_A = \text{Parameter}$  (per diode)



**Permissible Reverse voltage  $V_R = f(T_A)$**

$t_p = \text{Parameter}$ , Duty cycle  $< 0.01$

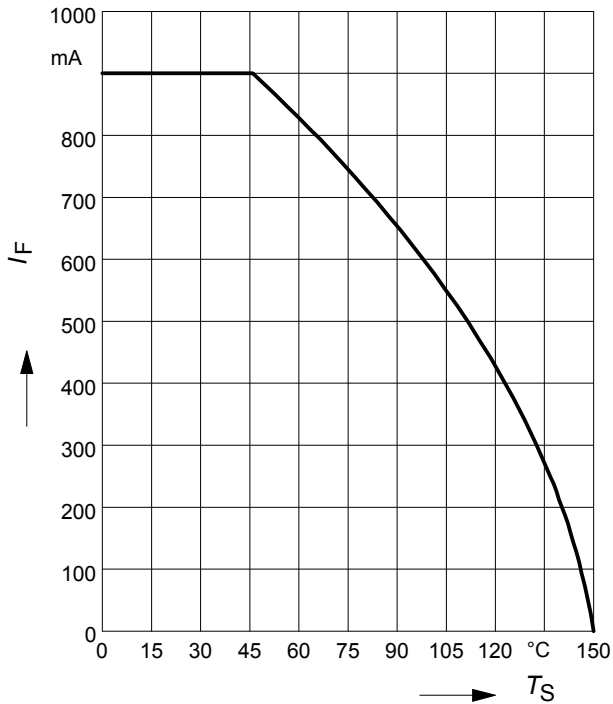
Device mounted on PCB with  $R_{th} = 160 \text{ K/W}$



**Forward current  $I_F = f(T_S)$**

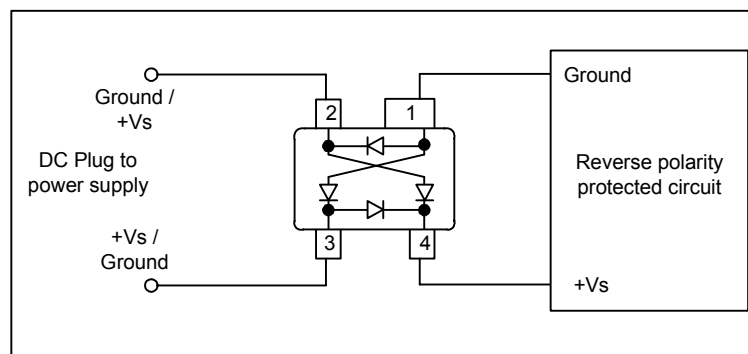
Current flows through two chips

per package at the same time (per array)

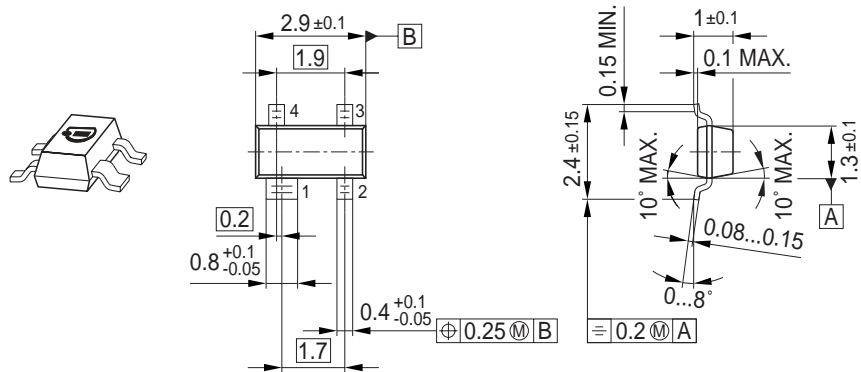


**Application example BAS3007A-RPP**

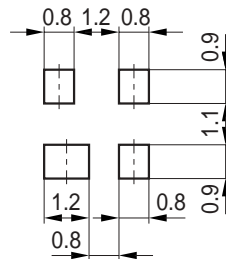
Advanced Reverse Polarity Protection(RPP): due to diode orientation, circuit at the right will be protected from damage and will also function normally in the event reverse polarity is applied to pins 2 and 3 of the BAS3007A-RPP.



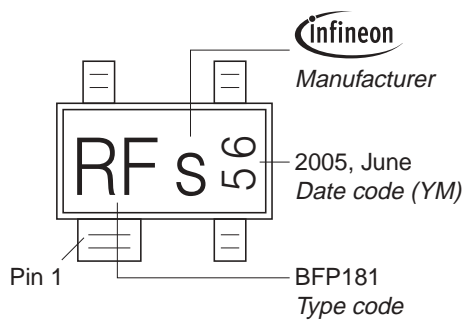
Package Outline



Foot Print

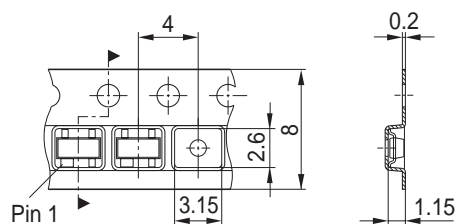


Marking Layout (Example)



Standard Packing

Reel  $\varnothing 180$  mm = 3.000 Pieces/Reel  
 Reel  $\varnothing 330$  mm = 10.000 Pieces/Reel



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