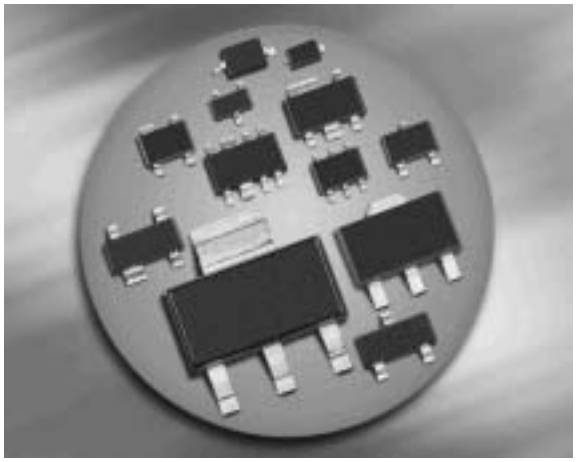
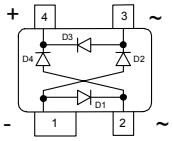
Low VF Schottky Diode Array

- 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[1)]
- Qualified according AEC Q101



AEC Qualified RoHS

BAS3007A-RPP



Type	Package	Configuration	Marking
BAS3007A-RPP	SOT143	bridge	E1s

Maximum Ratings at T_A = 25°C, unless otherwise specified

Parameter	Symbol	Value	Unit
Diode reverse voltage[2)]	V_R	30	V
Peak reverse voltage[2)]	V_{RM}	30	
RMS reverse voltage[2)]	$V_{R(RMS)}$	21	
Forward current[2)]	I_F		mA
$T_S \leq 46$°C		900	
$T_S \leq 82$°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	

[1]Pb-containing package may be available upon special request

[2]For T_A > 25°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[1)]	R_{thJS}	≤ 95	K/W

Electrical Characteristics at T_A = 25°C, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Reverse current (per diode)[2)]	I_R				µA
V_R = 12 V		-	-	30	
V_R = 30 V		-	-	350	
Forward voltage (per diode)[2)3)]	V_F				V
I_F = 100 mA		-	0.35	0.4	
I_F = 350 mA		-	0.4	0.5	
I_F = 500 mA		-	0.45	0.55	
I_F = 700 mA		-	0.5	0.6	
I_F = 900 mA		-	0.6	0.7	
AC Characteristics					
Diode capacitance (per diode)	C_T	-	9	15	pF
V_R = 5 V, f = 1 MHz					

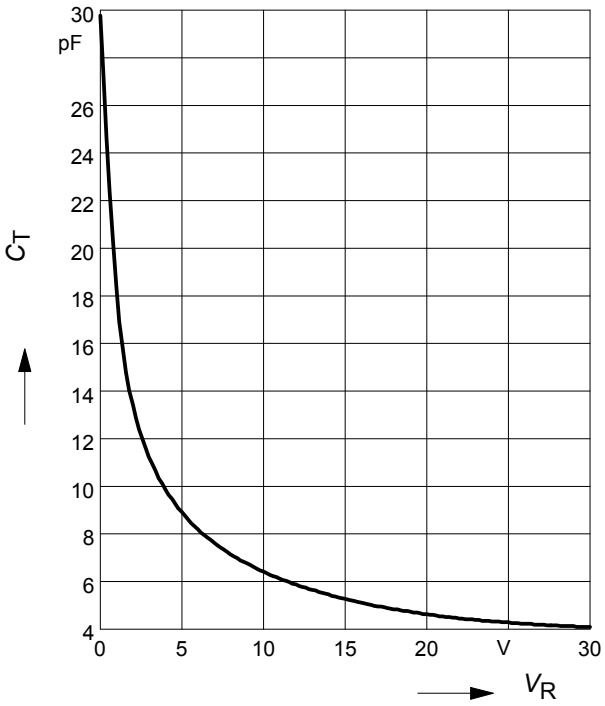
[1]For calculation of R_{thJA} please refer to Application Note Thermal Resistance

[2]Pulsed test, t_p = 300 µs; D = 0.01

[3]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.

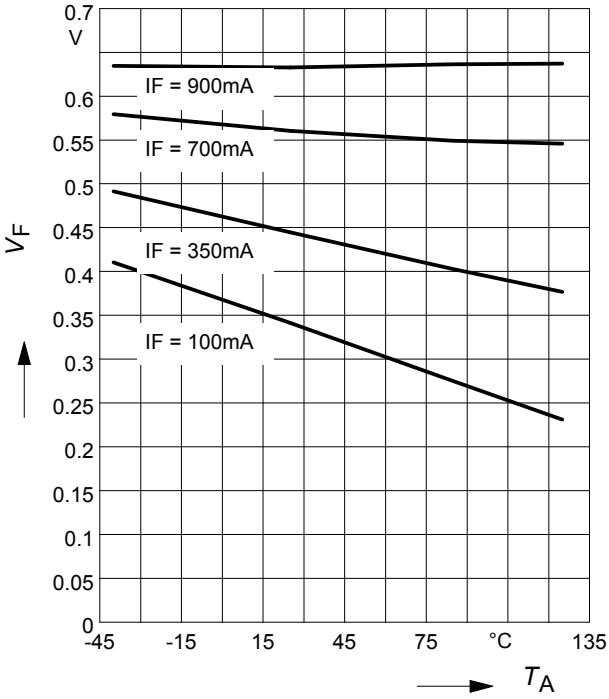
Diode capacitance $C_T = f(V_R)$

f = 1MHz (per diode)



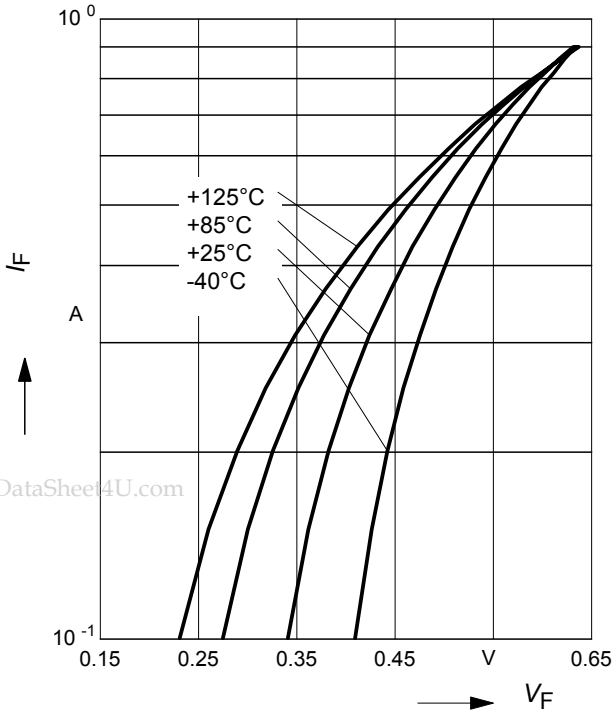
Forward Voltage $V_F = f(T_A)$

I_F = Parameter (per diode)



Forward current $I_F = f(V_F)$

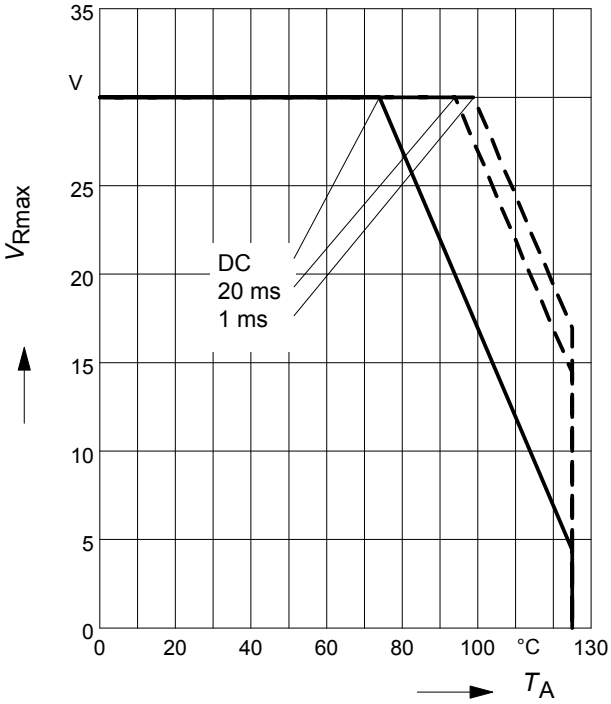
T_A = Parameter (per diode)



Permissible Reverse voltage $V_R = f(T_A)$

t_p = Paramter, Duty cycle < 0.01

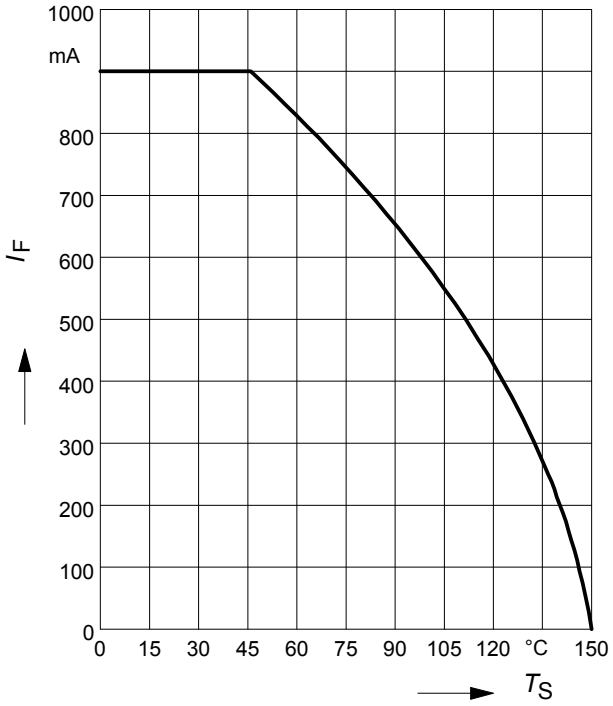
Device mounted on PCB with R_{th} = 160 K/W



Forward current $I_F = f(T_S)$

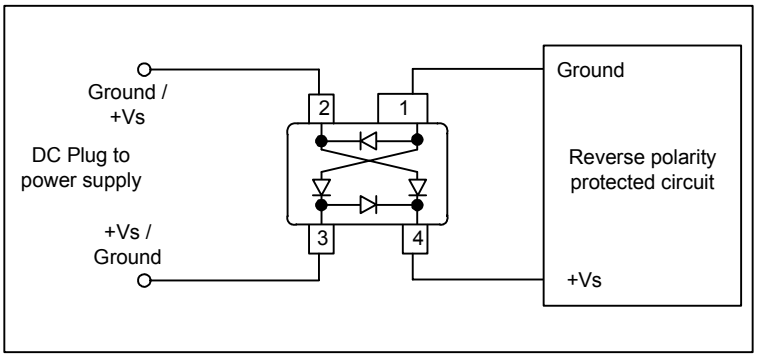
Current flows through two chips

per package at the same time (per array)

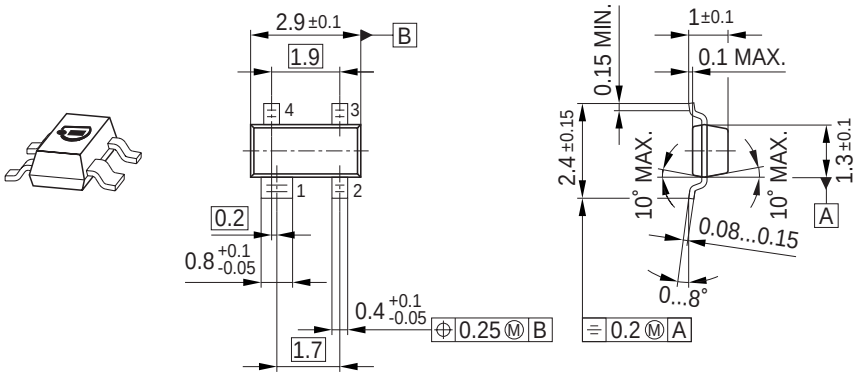


Application example BAS3007A-RPP

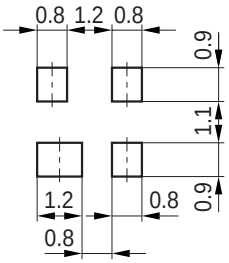
Advanced Reverse Polarity Protection(RPP): due to diode orientation, circuit at the right will be protected from damage and will also function normally in the event reverse polarity is applied to pins 2 and 3 of the BAS3007A-RPP.



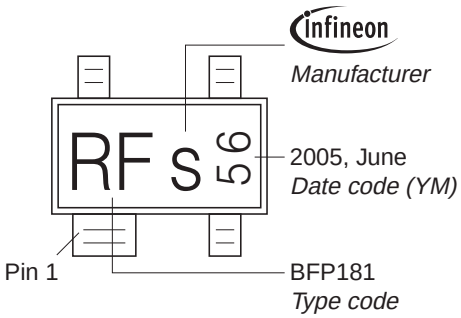
Package Outline



Foot Print

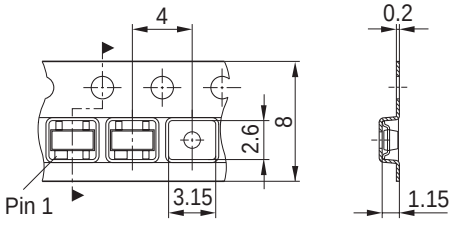


Marking Layout (Example)



Standard Packing

Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel



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