

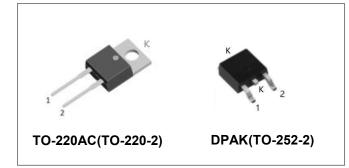
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Technical Data

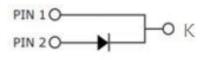
S4D08120A S4D08120E



S4D08120A S4D08120E 1200V SIC POWER SCHOTTKY RECTIFIERS



Circuit Diagram



Applications

- Alternative energy inverters
- Power Factor Correction (PFC)
- Free-Wheeling diodes
- Switching supply output rectification
- Reverse polarity protection

Maximum Ratings

Maximum Natings				
Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _{RWM} V _R	-	1200	V
Average Rectified Forward Current	IF (AV)	Tc=150°C	8	А
Peak One Cycle Non-Repetitive Surge Current	IFSM	10ms, Half Sine pulse, TJ=25°C	64	А
Repetitive Peak Forward Surge Current	I _{FRM}	10 ms, Half Sine pulse , T _J =25°C	38	А

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Description

S4D08120A/S4D08120E are SiC Schottky rectifiers packaged in TO-220AC(TO-220-2)/DPAK(TO-252-2) case. The devices are high voltage Schottky rectifiers that have very low total conduction losses and very stable switching characteristics over temperature extremes. The S4D08120A/S4D08120E are ideal for energy sensitive, high frequency applications in challenging environments.

Features

- 175°C T_J operation
- Ultra-low switching loss
- Switching speeds independent of operating temperature
- Low total conduction losses
- High forward surge current capability
- High package isolation voltage
- Terminals finish: 100% Pure Tin
- Pb Free Device
- All SMC parts are traceable to the wafer lot
- Additional electrical and life testing can be performed upon request



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Electrical Characteristics:

Characteristics	Symbol	Condition	Тур.	Max.	Units
Forward Voltage Drop*	V _{F1}	@ 8A, Pulse, T _J = 25 °C	1.6	1.8	V
	V _{F2}	@ 8A, Pulse, T _J = 175 °C	2.2	3.0	V
Reverse Current*	I _{R1}	@V _R = rated V _R T _J = 25 °C	35	200	uA
	I _{R2}	@V _R = rated V _R T _J = 175 °C	100	350	uA
Junction Capacitance	Ст	VR=0V, Tj=25℃,f=1MHz	560	-	pF

* Pulse width < 300 μs, duty cycle < 2%

Thermal-Mechanical Specifications:

Characteristics	Symbol	S4D08120A	S4D08120E	Units
Junction Temperature	TJ	-55 to +175		°C
Storage Temperature	T _{stg}	-55 to +175		°C
Maximum Thermal Resistance Junction to Case	R_{qJC}	1.7	1.5	°C/W

Ordering Information

Device	Package	Shipping
S4D08120A	TO-220AC(TO-220-2)	50pcs / tube
S4D08120E	DPAK(TO-252-2)	2500pcs / reel

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.









Ratings and Characteristics Curves

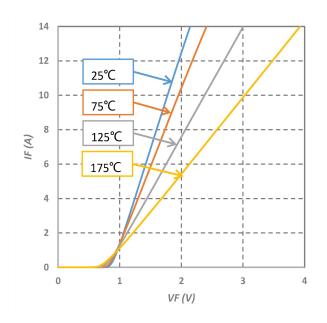


Fig.1-Typical Forward Voltage Characteristics

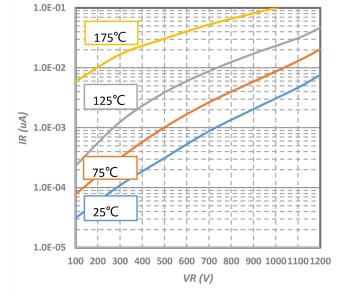


Fig.2-Typical Reverse Characteristics

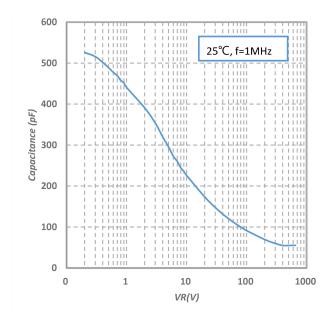


Fig.3-Capacitance vs. Reverse Voltage



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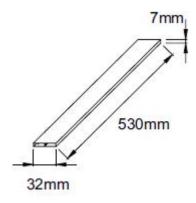
Marking Diagram

RoHS

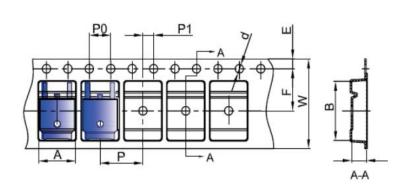
Pb

Where XXXXX is YYWWL S4D = Device Type = Package type = Forward Current (8A) Ā/E S4D08120E 08 S4D08120A 120 = Reverse Voltage (1200V) SSG XXXXX SSG = SSG SSG XXXXX YY = Year ww = Week = Lot Number L Cautions: Molding resin Epoxy resin UL:94V-0

Tube Specification(TO-220-2)



Carrier Tape & Reel Specification DPAK(TO-252-2)



SYMBOL	Millimeters			
STMBOL	Min.	Max.		
A	6.80	7.00		
В	10.40	10.60		
С	2.60	2.80		
d	Φ1.45	Φ1.65		
E	1.65	1.85		
F	7.40	7.60		
P0	3.90	4.10		
Р	7.90	8.10		
P1	1.90	2.10		
W	15.90	16.30		

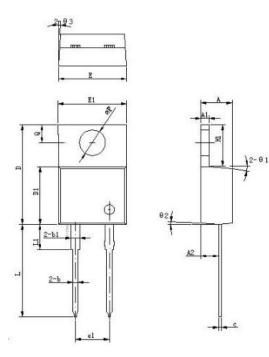


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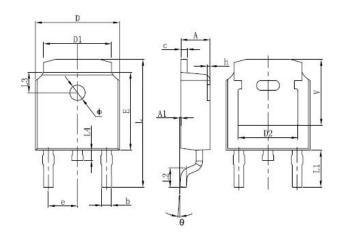
RoHS 🗭

Mechanical Dimensions TO-220AC(TO-220-2)



Symbol	Dimensions in millimeters				
cj	Min. Typical		Max.		
Α	4.55	4.70	4.85		
A1	1.17	1.27	1.37		
A2	2.59	2.69	2.89		
b	0.71	0.81	0.96		
b1		1.27			
С	0.36	0.38	0.61		
D	14.64	14.94	15.24		
D1	8.55	8.70	8.90		
E	10.01	10.16	10.31		
E1	9.98	10.18	10.38		
e1		5.08			
H1	6.04	6.24	6.44		
L	13.00	13.86	14.08		
L1		3.80			
ΦP	3.74	3.84	4.04		
Q	2.54	2.74	2.94		
Θ1		5°			
Θ2		4°			
Θ3		4°			

Mechanical Dimensions DPAK(TO-252-2)



SYMBOL	Millim	neters	Inches		
STMBOL	Min.	Max.	Min.	Max.	
Α	2.20	2.40	0.086	0.094	
A1	0	0.13	0	0.005	
b	0.635	0.889	0.025	0.035	
с	0.460	0.889	0.018	0.035	
D	6.50	6.70	0.250	0.265	
D1	4.95	5.46	0.195	0.215	
D2	4.32	REF.	0.170 REF.		
E	6.00	6.20	0.235	0.245	
е	2.286	BSC	0.090 BSC		
L	9.398	10.414	0.370	0.410	
L1	1.778 REF.		0.108 REF.		
L2	1.40	1.78	0.055	0.07	
L3	1.60 REF.		0.063 REF.		
L4	0.60	1.02	0.024	0.040	
Φ	1.10	1.30	0.043	0.051	
Θ	0°	10°	0°	10°	
h	0	0.30	0	0.012	
V	5.21 REF.		0.205	REF.	



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