

SCA1N4148

SWITCHING DIODE—DIE ONLY

High Reliability—High Speed Switching
Radiation Hardness Assured

DESCRIPTION

This “high reliability high-speed switching” die is suitable for numerous military applications.

This die meets the most stringent Hybrid applications.

FEATURES

- Superior construction with tungsten slugs
- Category-I metallurgical bonds
- Hermetical sealed glass package
- Low forward voltage drop
- Low reverse leakage current
- Highly stable reverse breakdown characteristics
- Also provided in various surface mount type packages and bare die
- Radiation hard version is available

APPLICATIONS

- Space, military and other high-reliability applications
- Applications requiring high-speed switching

PACKAGING

- Axial lead (TBD)
- SMT (UB)
- SMT
- Bare die for HYBRID manufacturers

Electrical Characteristics	Operation Conditions	min	typ	max	unit	symbol
Reverse current	VR = 20V DC, TA=+25°C	-	TBD	25.0	nA	IR1
	Rated VRWM, TA=+25°C	-	TBD	500.0	nA	IR2
	VR = 20V DC, TA=+150°C	-	TBD	35.0	uA	IR3
	Rated VRWM, TA=+150°C	-	TBD	75.0	uA	IR4
Forward voltage drop						
SCA1N4148	IF=10mA, TA=+25°C	-	TBD	0.8	V	VF1
SCA1N4148	IF=100mA, TA=+25°C	-	TBD	1.20	V	VF2
SCA1N4148	IF=10mA, TA=+150°C	-	TBD	0.8	V	VF1
SCA1N4148	IF=100mA, TA=-55°C	-	TBD	1.30	V	VF2
Breakdown voltage	IR=100uA, TA=+25°C	100	TBD	-	V	VBR1
Capacitance	VR=0V, f=1MHz	-	TBD	4.0	pF	C1
Capacitance	VR=1.5V, f=1MHz	-	TBD	2.8	pF	C2
Switching Characteristics						
Reverse recovery time	IF=10mA, IR(REC) =1.0mA		TBD	5	nsec	Trr
Forward recovery voltage	Tr=10ns, IF=500mA		TBD	5	V(peak)	Vfr
Forward recovery time	Tr=10ns, IF=500mA		TBD	20	nsec	Tfr

Disclaimer: The information and specs on this data sheet is for preliminary use and actual specs may be changed at any time without notice and final specs will be determined at time of order.

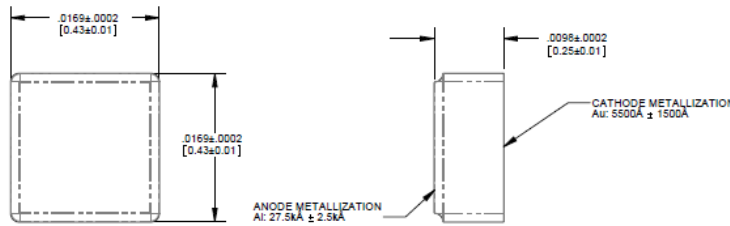
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MAX RATINGS	Reverse Breakdown voltage	Working peak reverse voltage	Average forward current	Forward current surge peak	Junction and Storage Temperature	Thermal resistance: junction to lead	Thermal resistance: junction to ambient	Thermal resistance: junction to solder pads
	V _{BR}	V _{RWM}	I _O (PCB)	I _{FSM}	T _J and T _{STG}	R _{θJL}	R _{θJA} (PCB)	R _{θJSP} (UB)
			(1).	TA = +25°C tp = 1s		at L=0.375 in.	(2).	
	V	V	mA	A(pk)	°C	°C/W	°C/W	°C/W
SCA1N4148	100.0	75.0	200.0	2.0	-65 to +175	250.0	325.0	120.0

(1) Derate at 1.0mA/°C (except UB) for TA above +75°C and 1.78mA/°C (UB) for TA above +87.5°C.

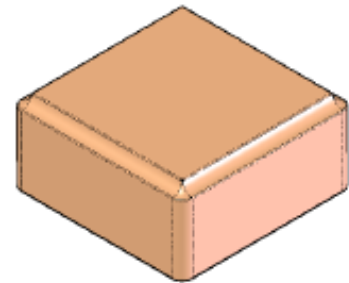
(2) TA=75°C for both axial and metal electrode leadless face diodes (MELF) (US) on printed circuit board (PCB). R_{θJA}(PCB) is measured at I_O=200mA.

Bare Die Square Au—Al



DIE SPECIFICATIONS

PKG TYPE	Die Square				Note
	Min	Typ	Max		
A	0.006	TBD	0.006	inches	
B	0.013	TBD	0.017	inches	
C	0.008	TBD	0.012	inches	
Top Metal	25.000	TBD	-	kA	Anode - Al
Back Metal	4.000	TBD	-	kA	Cathode - Au



SEMICOA