GC47733-192AP

Dual Low Magnetic Moment Fast Diodes for MRI Applications

RoHS Compliant

GENERAL DESCRIPTION

The GC47733-192AP is designed to optimize performance and reduce assembly labor, cost, and polarity errors. This device has excellent power handling capabilities and reliability well suited for MRI applications.

There are two principle applications for which the GC47733-192AP modules are intended:
1) MRI receiver protection from high RF energy fields, including long RF pulses and RF spike pulses present in most MRI machines. The GC47733-192AP acts as a passive protector (limiter) for the MRI receiver's LNA. The diode assembly exhibits extremely low insertion loss, both in the "on" state (high power present) and the "off" state (receiver power present) so the Receiver's Noise Figure is not increased by the protector circuit.
2) Passive switching of surface coil detuning and blocking circuits. In this case, the flow of loop current during transmitter pulse turns on the diodes, without a switch driver.

Manufacture of dual anti-parallel pairs of GC47733-192AP's ensures that the matched pair of diodes can be inserted in a coil with the correct diode polarities and with the minimum parasitic inductance and capacitance, thermal impedance and labor for the coil manufacturer.

KEY FEATURES

- Low magnetic construction
- RoHS compliant
- Robust assembly
- Electrically Matched configuration
- Fast turn on
- Low conductance at 0 V bias
- Compatible with automatic insertion equipment

APPLICATION/BENEFITS

- MR passive receiver protection
- MR passive blocking circuits
- MR passive detuning circuits
- MR passive disable circuits

ABSOLUTE MAXIMUM RATINGS @ 25°C

Rating	Symbol	Value	Unit
Storage Temperature	T stg	-55 to +125	ºC
Operating Temperature	T op	-55 to +125	ºC
Power Dissipation	Pd	2.0	Watts

GC47733-192AP

Dual Low Magnetic Moment Fast Diodes for MRI Applications

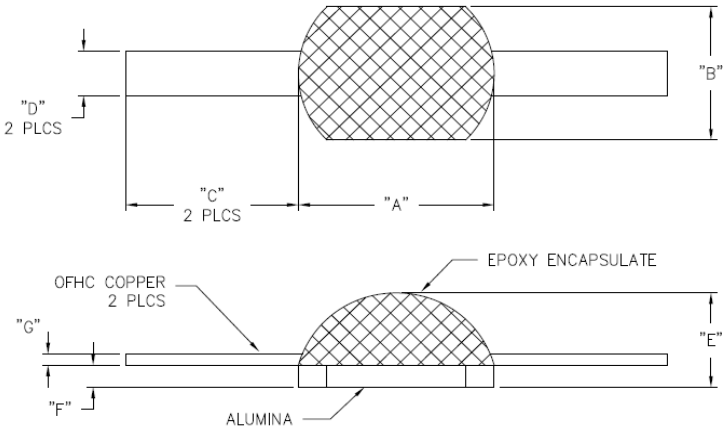
RoHS Compliant

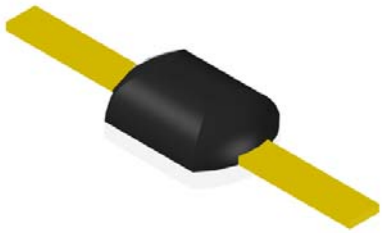
DEVICE ELECTRICAL PARAMETERS AT 25°C

Parameter	Symbol	Conditions	MIN	TYPICAL	MAX	Units
Breakdown Voltage	V_B	I_R = 10uA (Single Chip)	50			V
Forward Voltage Note 1:	V_F	I_F = 100 mA			1.5	V
Capacitance	C_J	V_R = 10V, F = 1 MH_Z (Single Chip)			1.5	pF
Series Resistance	R_S	I_F = 100mA, F = 100 MHz			0.8	Ohms
Carrier Lifetime	T_L	I_F = 10mA, I_R = 6 mA		25		nS

Note: 1 Vf Testing 100%

PACKAGE OUTLINE





DIM	INCHES			MILLIMETERS		
	MIN	TYP	MAX	MIN	TYP	MAX
A	0.165	0.170	0.175	4.191	4.318	4.445
B	0.115	0.120	0.125	2.921	3.048	3.175
C	0.150	-	-	3.810	-	-
D	0.037	0.040	0.043	0.940	1.016	1.092
E	-	-	0.085	-	-	2.159
F	0.018	0.020	0.022	0.457	0.508	0.559
G	0.008	0.010	0.012	0.203	0.254	0.305