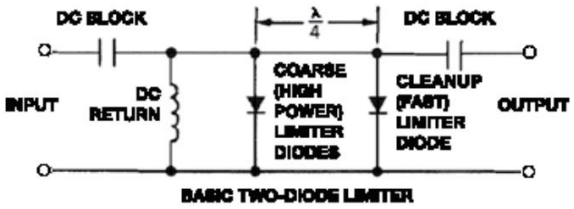
LIMITER DIODES

MLD Series DATA Sheet

ABSTRACT

Designed for use in passive or active limiters over the entire range of frequencies from 100 MHz to beyond 20 GHz. The MLD series limiter diodes are offered for flexibility in design of low (lowest VB, fastest turn-on time), medium and high (highest VB, slowest turn-on time) power limiters. For use in waveguides, coax, microstrip or stripline. Single or cascade devices may be used depending on power levels.



BASIC TWO-DIODE LIMITER

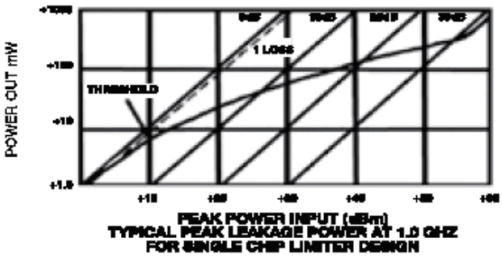
CHIP ELECTRICAL PARAMETERS T_A=25°C

Type Number	V_b MIN (V)	C_{J0} TYP (pF)	C_{J6} MAX (pF)	R_s TYP @10mA (W)	T_L TYP (ns)	θ_p TYP (°C/W)	θ_{cw} (°C/W)
MLD5113	20	0.20	0.15	1.5	5	20	100
MLD5114	-	0.50	0.30	1.2	10	12	80
MLD5115	45	0.20	0.15	1.5	10	15	80
MLD5116	-	0.50	0.30	1.2	15	10	60
MLD5117	-	0.70	0.50	1.0	20	6	40
MLD5118	120	0.20	0.15	1.5	50	1.2	40
MLD5119	-	0.60	0.30	1.0	50	0.5	20
MLD5120	-	0.80	0.50	0.5	100	0.3	15
MLD5121	15	0.12	0.10	2.0	5	30	120
MLD5122	-	0.20	0.15	1.5	5	20	80
MLD5123	30	0.12	0.10	2.0	7	20	100
MLD5124	-	0.20	0.15	1.5	7	15	70

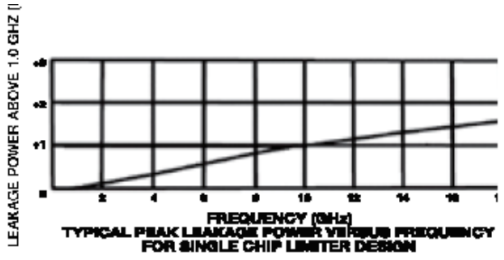
TYPICAL LIMITER PERFORMANCE RATINGS T_A=25°C

Type Number	PEAK P_{in} MAX (@ 1.0µs) (dBm)	LEAKAGE P_{out} TYP (dBm)	THRESHOLD TYP (dBm)	INSERTION LOSS TYP (db)	CW POWER IN MAX (W)
MLD5113	+50	+22	+10	0.1	2
MLD5114	+53	+24	+10	0.2	3
MLD5115	+53	+27	+15	0.1	3
MLD5116	+56	+29	+15	0.2	4
MLD5117	+59	+31	+15	0.2	5
MLD5118	+60	+39	+20	0.1	5
MLD5119	+63	+41	+20	0.2	10
MLD5120	+66	+44	+20	0.2	15
MLD5121	+47	+19	+7	0.1	2
MLD5122	+50	+22	+7	0.1	3
MLD5123	+47	+24	+12	0.1	3
MLD5124	+50	+27	+12	0.1	4

PERFORMANCE



TYPICAL PEAK LEAKAGE POWER AT 1.0 GHZ FOR SINGLE CHIP LIMITER DESIGN



TYPICAL PEAK LEAKAGE POWER VERSUS FREQUENCY FOR SINGLE CHIP LIMITER DESIGN

Operating Temperature: -55°C to 150°C

Max Leakage Current: 0.5 ma @ 88% of min. rated breakdown

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