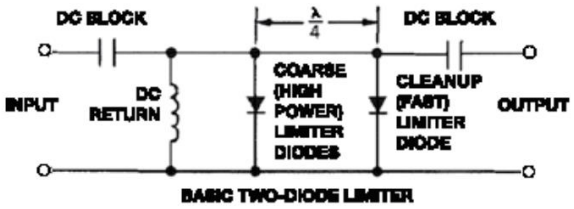
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# LIMITER DIODES
MLD Series DATA Sheet

## 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

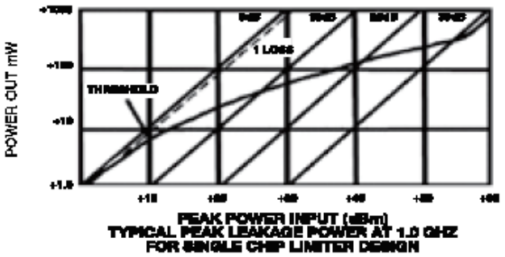
## CHIP ELECTRICAL PARAMETERS $T_A$=25°C

| Type Number | $V_b$ MIN (V) | $C_{J0}$ TYP (pF) | $C_{J6}$ MAX (pF) | $R_s$ TYP @10mA (W) | $T_L$ TYP (ns) | $\theta_p$ TYP (°C/W) | $\theta_{cw}$ (°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 |

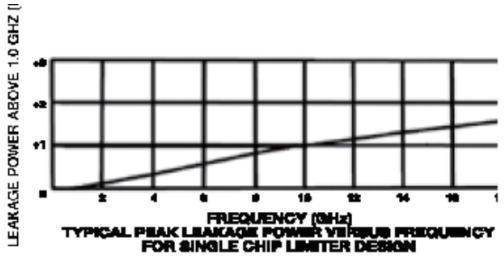
## TYPICAL LIMITER PERFORMANCE RATINGS $T_A$=25°C

| 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**



PEAK POWER INPUT (dBm)
TYPICAL PEAK LEAKAGE POWER AT 1.0 GHZ
FOR SINGLE CHIP LIMITER DESIGN



FREQUENCY (GHz)
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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ISO9001:2008
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