

## Fast-Acting Varactors for Sub-Nanosecond Power Limiting in Receiver Protectors

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*T.M. Nelson and H. Goldie. "Fast-Acting Varactors for Sub-Nanosecond Power Limiting in Receiver Protectors." 1974 S-MTT International Microwave Symposium Digest of Technical Papers 74.1 (1974 [MWSYM]): 176-178.*

Fast-acting pn junctions were developed to self-limit in less than 1 nsec at relatively high peak levels at X-band frequencies. The cascading of junctions in order of decreasing base region thickness behind high average power plasma limiters resulted in a passive receiver protector capable of limiting 1 nsec risetime multi-kilowatt RF pulses to 1 watt spike levels. It is also shown that 1 watt spikes of less than 10 nsec duration do not degrade the noise figure of balanced mixers employing small-junction (5 to 10  $\mu$  diameters) Schottky barrier diodes.

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