

INTEGRATED MODULES

VOA-MUX/DMUX MODULES

VOA-MUX/DMUX (VMUX) Modules are passive modules for multiplexing and demultiplexing up to eight bands or 100 GHz channels with integrated power equalization. VMUX modules independently equalize power levels in each channel or band using DiCon's MEMS Attenuator (VOA) and integrated (PIN) photodiodes. VMUXes are a low cost alternative to external Dynamic Gain Equalizers.



FEATURES

- Multi-Channel MUX/DMUX with power monitoring and level control
- Upgradeable in groups of 4 bands or 100 GHz channels
- Ideal for metro and long haul applications
- Optional upgrade ports

APPLICATIONS

VMUX Modules are ideally suited for all MUX applications which require per band or per channel power equalization. For MUX applications, they provide pre-emphasis after terminal equipment transmitters. For DMUX applications they provide optical level automatic gain control in front of terminal equipment receivers. VMUX Modules can also be used to equalize the Add side of OADMs.



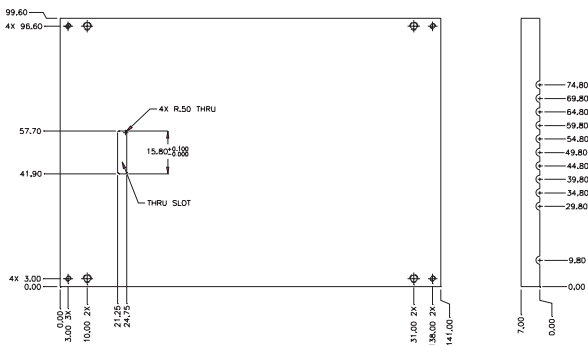
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OPTICAL SPECIFICATIONS

Passband ¹		0.2 nm min.
Insertion loss	C - P1	2.0 dB at CWL, 2.4 dB max.
	C - P4 ²	3.8 dB typ., 4.2 dB max
	C - P8	5.2 dB typ., 5.8 dB max.
Adjacent channel isolation ³		28 dB min.
Directivity		45 dB min.
Attenuation Range		15 dB min.
Temperature dependence ⁴		+/- 0.15 dB max.
Fast ripple ⁵		0.1 dB max.
Polarization dependent loss		0.15 dB max.
Polarization mode dispersion		0.1 ps max.
Back-reflection		-55 dB max.
Optical power		300 mW max.
Response speed		2 ms max.
Repeatability		0.1 dB max.
Wear-out		1 x 10 ⁷ cycles min.
Attenuation slope		20 dB/V max.
Monotonicity		0 dB/V min.
Fiber type		9/125 Corning SMF-28
Fiber jacket		250 micron, 200 kpsi bare fiber
Operating temperature		0 ^o C to +65 ^o C
Storage temperature		-40 ^o C to +85 ^o C

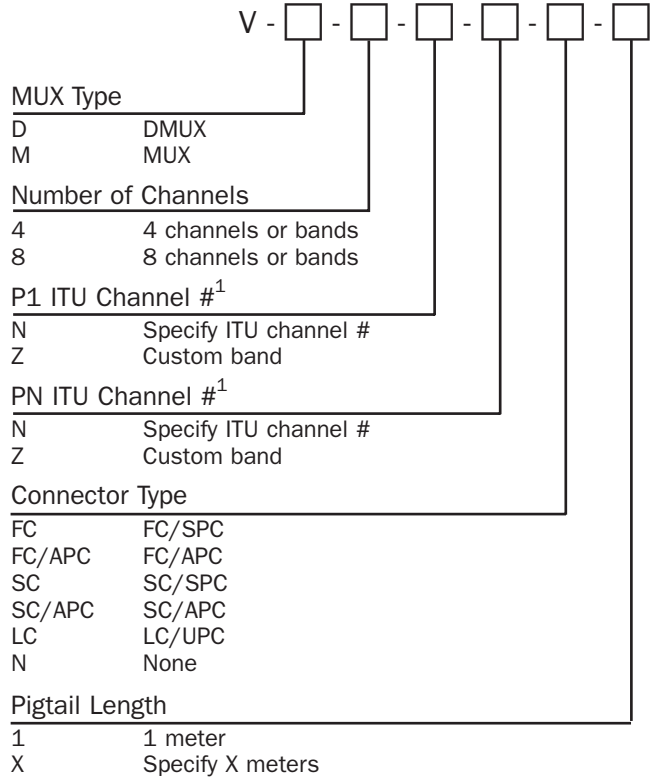
- For 100 GHz Channel MUX. Custom bands by request.
- For 4 Channel VMUX.
- 40 dB high isolation by request.
- At 0 dB, relative to 23^oC.
- For fast "F" ripple type only. Max. change of each 200 GHz segment within C or L band, depending on part number.

HOUSING DIMENSIONS



Units: mm

ORDERING INFORMATION



1. Based on ITU grid

ELECTRICAL SPECIFICATIONS

Electrical connector	Samtec TSSH-110-01-T-D-RA
VOA DC drive voltage	0 - 5 VDC
VOA resistance ¹	100 Kohms min.
VOA capacitance ¹	2 pF typ.
VOA power consumption ¹	10 μWatt max.
Photodiode dark current ²	1 nA max., T = 23°C, -5V bias
	15 nA max., T = 70°C, -5V bias
Photodiode bias voltage	-14V min., -2V max.
Photodiode linearity	+/- 15%
Photodiode shunt resistance ²	10 Mohms min.
Photodiode frequency bandwidth	1500 MHz max.
Photodiode capacitance ²	8 pF max., at -5V bias

- Per VOA, 4 or 8 total.
- Per PIN photodiode, 4 or 8 total.