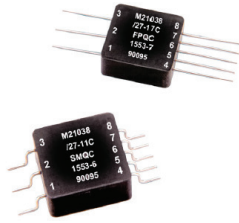


MIL-STD-1553 TRANSFORMERS

Dual Ratio SMT QPL Pulse Transformers

Ruggedized



Summary Performance Specifications

Drop	20% MAX
Overshoot	±1V MAX
Common Mode Rejection (CMR)	45dB MIN
Frequency Range (no load)	75kHz - 1MHz
Operating and Storage Temperature Range	-55°C to +130°C
Weight	5 grams MAX
Insulation Resistance (MIN)	10K MΩ @ 250Vdc
Dielectric Withstanding Voltage	100Vrms

- ⊗ Certified QPL MIL-STD-1553 applications
- ⊗ Designed, built and tested to MIL-PRF-21038
- ⊗ Dual Ratio, Single Package
- ⊗ Product Levels:
 - ⊗ Level C: for high reliability commercial/industrial applications
 - ⊗ Level M: for general purpose military applications
 - ⊗ Level T: for high reliability critical military applications
- ⊗ Two Packages Available:
 - ⊗ Package B: Gull-wing Leads
 - ⊗ Package F: Flat Pack
- ⊗ Max Reflow Temperature: 225°C
- ⊗ Moisture Sensitivity Level: 3
- ⊗ Applicable Standards:
 - ⊗ MIL-STD-1553B
 - ⊗ MIL-PRF-21038
 - ⊗ MIL-STD-202

Electrical Specifications @ 25°C

Part Number	Level	Military Designation No.	Package	Height MAX	Terminals	Turns Ratio	RDC MAX	Impedance MIN ¹
				IN. [mm]		(±3%)	(Ω)	(Ω)
SMQC1553-6	C	M21038/27-11C	B	0.250 [6.35]	1-3:4-8 1-3:5-7	1CT:1CT	1-3 = 3.0	(1-3)
SMQ1553-6	M	M21038/27-11				1CT:0.707CT	4-8 = 3.0	4,000
SMQT1553-6	T	M21038/27-11T						
SMQC1553-7	C	M21038/27-12C	B	0.250 [6.35]	1-3:4-8 1-3:5-7	1.40CT:1CT	1-3 = 3.5	(1-3)
SMQ1553-7	M	M21038/27-12				2CT:1CT	4-8 = 3.0	7,200
SMQT1553-7	T	M21038/27-12T						
SMQC1553-8	C	M21038/27-13C	B	0.250 [6.35]	1-3:4-8 1-3:5-7	1.25CT:1CT	1-3 = 3.2	(1-3)
SMQ1553-8	M	M21038/27-13				1.66CT:1CT	4-8 = 3.0	4,000
SMQT1553-8	T	M21038/27-13T						
SMQC1553-10*	C	M21038/27-15C	B	0.250 [6.35]	1-3:4-8 1-3:5-7	1CT:2.12CT	1-3 = 1.0	(4-8)
SMQ1553-10*	M	M21038/27-15				1CT:1.50CT	4-8 = 3.5	4,000
SMQT1553-10*	T	M21038/27-15T						
FPQC1553-6	C	M21038/27-16C	F	0.250 [6.35]	1-3:4-8 1-3:5-7	1CT:1CT	1-3 = 3.0	(1-3)
FPQ1553-6	M	M21038/27-16				1CT:0.707CT	4-8 = 3.0	4,000
FPQT1553-6	T	M21038/27-16T						
FPQC1553-7	C	M21038/27-17C	F	0.250 [6.35]	1-3:4-8 1-3:5-7	1.40CT:1CT	1-3 = 3.5	(1-3)
FPQ1553-7	M	M21038/27-17				2CT:1CT	4-8 = 3.0	7,200
FPQT1553-7	T	M21038/27-17T						
FPQC1553-8	C	M21038/27-18C	F	0.250 [6.35]	1-3:4-8 1-3:5-7	1.25CT:1CT	1-3 = 3.2	(1-3)
FPQ1553-8	M	M21038/27-18				1.66CT:1CT	4-8 = 3.0	4,000
FPQT1553-8	T	M21038/27-18T						
FPQC1553-10*	C	M21038/27-20C	F	0.250 [6.35]	1-3:4-8 1-3:5-7	1CT:2.12CT	1-3 = 1.0	(4-8)
FPQ1553-10*	M	M21038/27-20				1CT:1.50CT	4-8 = 3.5	4,000
FPQT1553-10*	T	M21038/27-20T						
SMQC1553-45*	C	M21038/27-27C	B	0.250 [6.35]	1-3:4-8 1-3:5-7	1CT:2.50CT	1-3 = 1.0	(4-8)
SMQ1553-45*	M	M21038/27-27				1CT:1.79CT	4-8 = 3.5	4,000
SMQT1553-45*	T	M21038/27-27T						
FPQC1553-45*	C	M21038/27-31C	F	0.250 [6.35]	1-3:4-8 1-3:5-7	1CT:2.50CT	1-3 = 1.0	(4-8)
FPQ1553-45*	M	M21038/27-31				1CT:1.79CT	4-8 = 3.5	4,000
FPQT1553-45*	T	M21038/27-31T						

* Designed for transceivers utilizing a single supply voltage (+5V).

¹ Impedance is tested at 75 kHz and at 1 MHz at -55°C ±2°C; +25°C ±2°C; and +130°C ±2°C.



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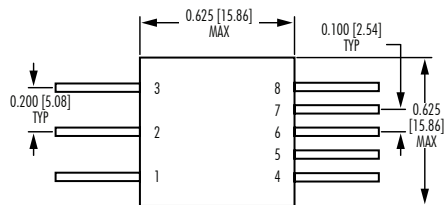
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MIL-STD-1553 TRANSFORMERS

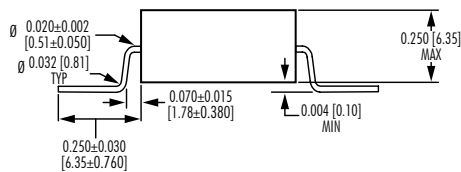
Dual Ratio SMT QPL Pulse Transformers

Ruggedized

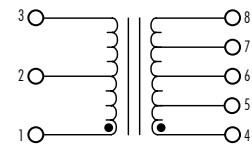
Package B



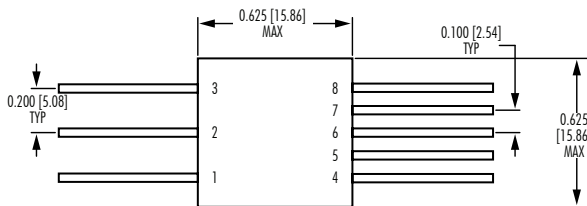
Dimensions: inch [mm]
Tolerance (unless otherwise specified): ± 0.010 [0.25]



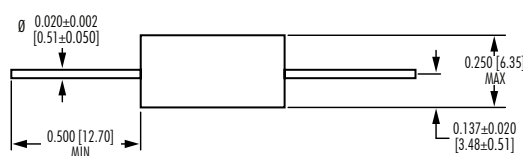
Electrical Schematics



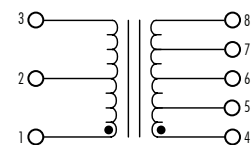
Package F



Dimensions: inch [mm]
Tolerance (unless otherwise specified): ± 0.010 [0.25]



Electrical Schematics



MIL-PRF-21038/27 Inspection, Sampling, Testing

Table 1 - Group A Inspection

Level "C" **		Level "M"		Level "T"	
Tests	Sampling Plan	Tests	Sampling Plan	Tests	Sampling Plan
N/A	N/A	Electrical Characteristics per MIL-PRF-21038/27	Sample per Table 3	Thermal Shock	100%
N/A	N/A	Visual & Mechanical Inspection	Sample per Table 3	Winding Continuity	100%
N/A	N/A	N/A	N/A	Electrical Characteristics per MIL-PRF-21038/27	100%
N/A	N/A	N/A	N/A	Impedance	Sample per Table 3
N/A	N/A	N/A	N/A	Visual & Mechanical Inspection	Sample per Table 3

Table 2 - Group B Inspection

Level "C" **		Level "M"		Level "T"	
Tests	Sampling Plan	Tests	Sampling Plan	Tests	Sampling Plan
N/A	N/A	Dielectric Withstanding Voltage	Sample per Table 3	Dielectric Withstanding Voltage	Sample per Table 3
N/A	N/A	Insulation Resistance	Sample per Table 3	Insulation Resistance	Sample per Table 3

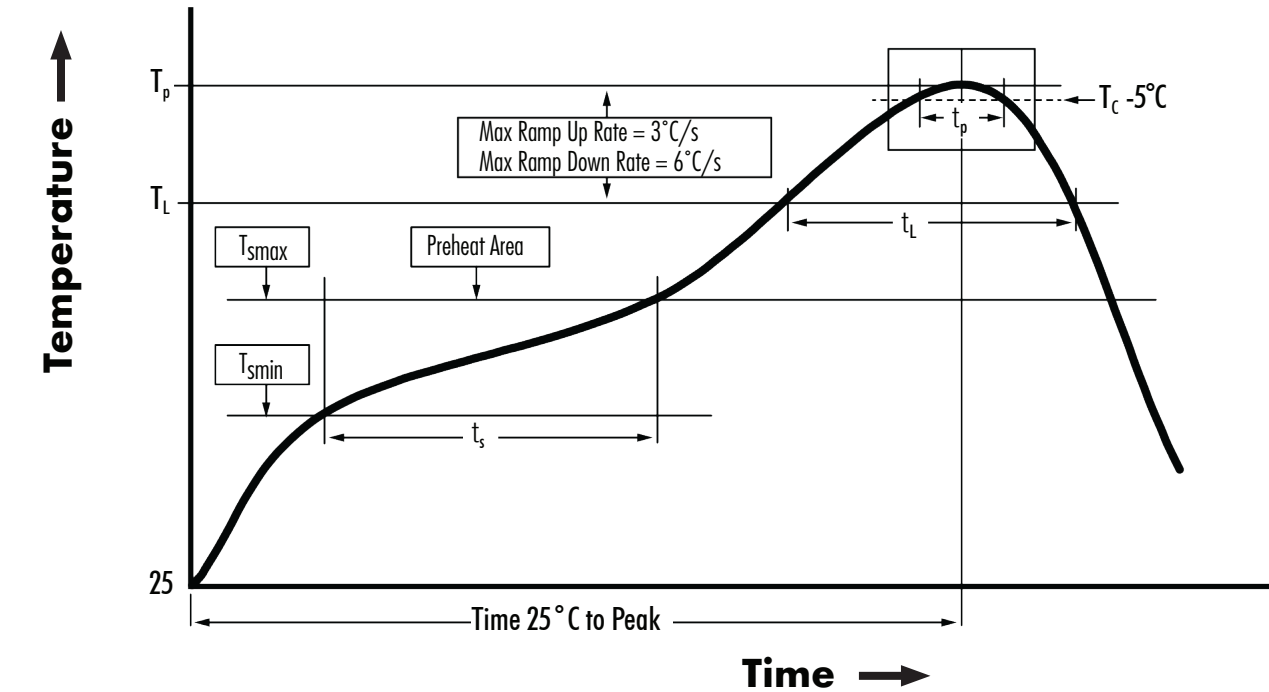
Table 3 - Sampling Plans for Group A and Group B Inspections

Lot Size	Group A, Group II Inspections	Group B
1 to 5	All	All
6 to 13	All	5
14 to 50	13	5
51 to 90	13	7
91 to 150	13	11
151 to 280	20	13
281 to 500	29	16
501 to 1,200	34	19
1,201 to 3,200	42	23
3,201 to 10,000	50	29

** Parts ordered to Level C are certified to comply with MIL-PRF-21038 Level C, however testing is performed per manufacturer's internal requirements and sampling rates.



Recommended Reflow Profile (Based on J-STD-020D)



T_{SMIN} (°C)	T_{SMAX} (°C)	T_L (°C)	T_P (°C MAX)	t_S (s)	t_L (s)	t_P (s MAX)	Ramp-up rate (T_L to T_P)	Ramp-down rate (T_P to T_L)	Time 25°C to peak temperature (s MAX)
Tin/Lead Profile									
100	150	183	235	60 - 120	60 - 150	20	3°C/s MAX	6°C/s MAX	360

- NOTES:
- 1. All temperatures measured on the package leads.
 - 2. Maximum number of reflow cycles not to exceed 2.



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