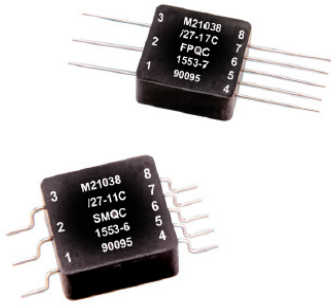


# MIL-STD-1553 Transformers

Dual Ratio SMT QPL Pulse Transformers  
Ruggedized



- Ⓡ Qualified for use in QPL MIL-STD-1553 applications
- Ⓡ Dual ratio in a single package (see Schematic)
- Ⓡ Moisture Sensitivity Level: 3
- Ⓡ Designed, built, and tested to MIL-PRF-21038 Levels\* C, M, and T
- Ⓡ Two packages available: Package B has gull-wing leads, and Package F is flat pack
- Ⓡ Built in ISO 9001 facility
- Ⓡ Applicable specifications

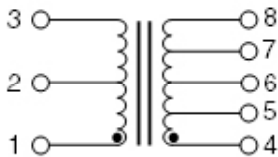
## Summary Performance Specifications

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

- n MIL-STD-1553B
- n MIL-STD-202
- n MIL-PRF-21038
- n ISO 9001

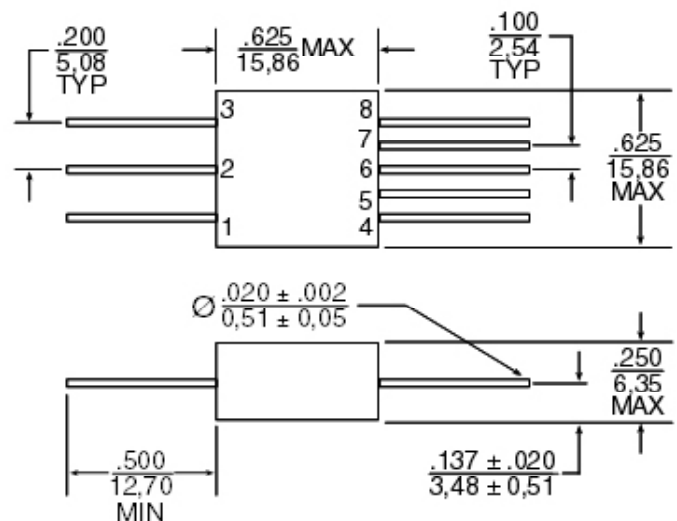
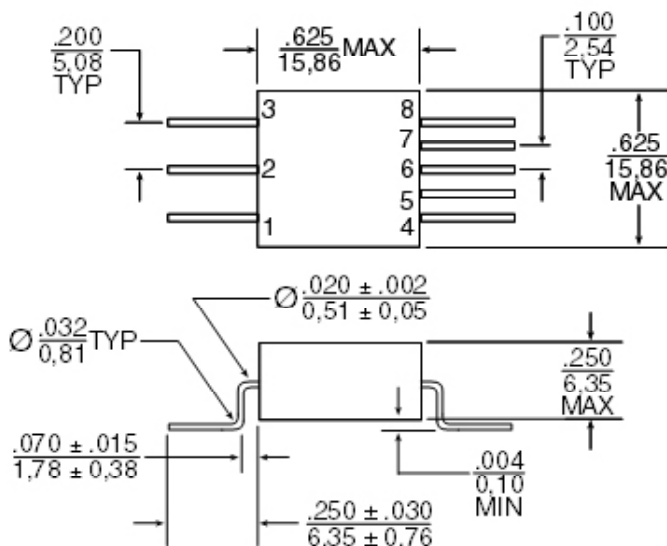
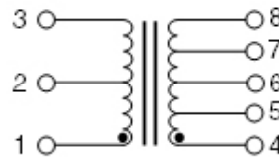
- \* n Level C - for high reliability commercial/industrial applications
- n Level M - for general purpose military applications
- n Level T - for high reliability critical military applications

### Package B



- Notes:
1. All dimensions are in inches.
  2. Tolerances: .xx = +.008
  3. Pan/Tube Size=16
  4. All specifications and dimensions are subject to change without notice.

### Package F



# MIL-STD-1553 Transformers

Dual Ratio SMT QPL Pulse Transformers

Ruggedized



Characteristics									
Line	Level	Military Designation No.	Pulse Part No.	Package	Height (in. MAX)	Terminals	Ratio (±3%)	RDC (Ω MAX)	Impedance (Ω MIN)
1	C	M21038/27-11C	SMQC1553-6	B	.250	1-3:4-8	1CT:1CT	1-3 3.0	(1-3)
2	M	M21038/27-11	SMQ1553-6			1-3:5-7	1CT:.707CT	4-8 3.0	4,000
3	T	M21038/27-11T	SMQT1553-6						
4	C	M21038/27-12C	SMQC1553-7	B	.250	1-3:4-8	1.4CT:1CT	1-3 3.5	(1-3)
5	M	M21038/27-12	SMQ1553-7			1-3:5-7	2CT:1CT	4-8 3.0	7,200
6	T	M21038/27-12T	SMQT1553-7						
7	C	M21038/27-13C	SMQC1553-8	B	.250	1-3:4-8	1.25CT:1CT	1-3 3.2	(1-3)
8	M	M21038/27-13	SMQ1553-8			1-3:5-7	1.66CT:1CT	4-8 3.0	4,000
9	T	M21038/27-13T	SMQT1553-8						
10	C	M21038/27-15C	SMQC1553-10*	B	.250	1-3:4-8	1CT:2.12CT	1-3 1.0	(4-8)
11	M	M21038/27-15	SMQ1553-10*			1-3:5-7	1CT:1.5CT	4-8 3.5	4,000
12	T	M21038/27-15T	SMQT1553-10*						
13	C	M21038/27-16C	FPQC1553-6	F	.250	1-3:4-8	1CT:1CT	1-3 3.0	(1-3)
14	M	M21038/27-16	FPQ1553-6			1-3:5-7	1CT:.707CT	4-8 3.0	4,000
15	T	M21038/27-16T	FPQT1553-6						
16	C	M21038/27-17C	FPQC1553-7	F	.250	1-3:4-8	1.4CT:1CT	1-3 3.5	(1-3)
17	M	M21038/27-17	FPQ1553-7			1-3:5-7	2CT:1CT	4-8 3.0	7,200
18	T	M21038/27-17T	FPQT1553-7						
19	C	M21038/27-18C	FPQC1553-8	F	.250	1-3:4-8	1.25CT:1CT	1-3 3.2	(1-3)
20	M	M21038/27-18	FPQ1553-8			1-3:5-7	1.66CT:1CT	4-8 3.0	4,000
21	T	M21038/27-18T	FPQT1553-8						
22	C	M21038/27-20C	FPQC1553-10*	F	.250	1-3:4-8	1CT:2.12CT	1-3 1.0	(4-8)
23	M	M21038/27-20	FPQ1553-10*			1-3:5-7	1CT:1.5CT	4-8 3.5	4,000
24	T	M21038/27-20T	FPQT1553-10*						
25	C	M21038/27-27C	SMQC1553-45*	B	.250	1-3:4-8	1CT:2.50CT	1-3 1.0	(4-8)
26	M	M21038/27-27	SMQ1553-45*			1-3:5-7	1CT:1.79CT	4-8 3.5	4,000
27	T	M21038/27-27T	SMQT1553-45*						
28	C	M21038/27-31C	FPQC1553-45*	F	.250	1-3:4-8	1CT:2.50CT	1-3 1.0	(4-8)
29	M	M21038/27-31	FPQ1553-45*			1-3:5-7	1CT:1.79CT	4-8 3.5	4,000
30	T	M21038/27-31T	FPQT1553-45*						

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

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

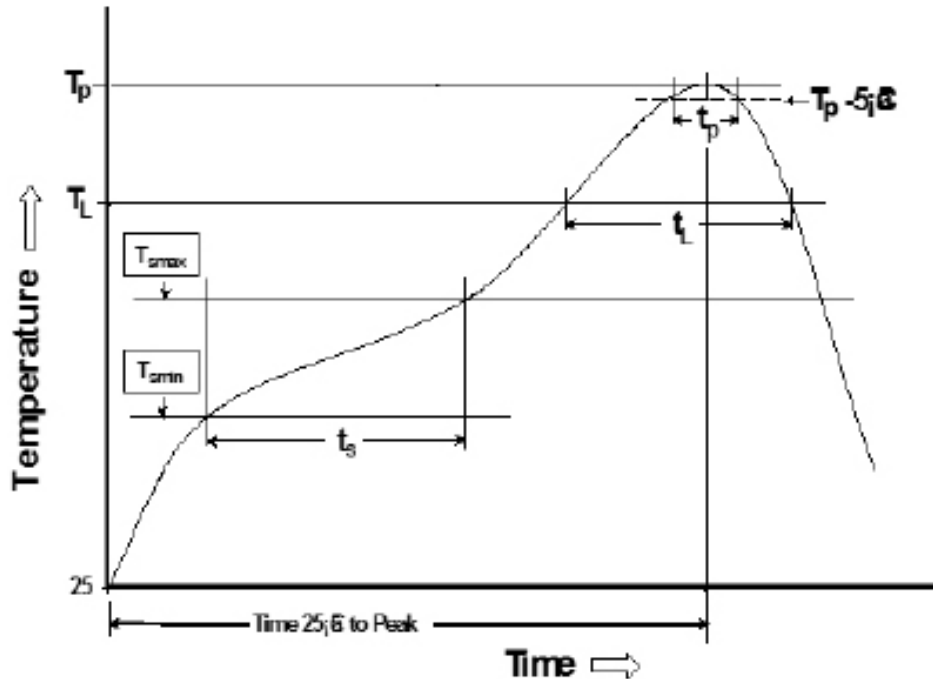
Table 1 — Group A Inspection					
Level "C"***		Level "M"		Level "T"	
Tests	Sampling Plan	Tests	Sampling Plan	Tests	Sampling Plan
N/A	N/A	Electrical Characteristics per MIL-PRF-21038/27	Sample per Table 3	Thermal Shock	100%
N/A	N/A	Visual and Mechanical Inspection	Sample per Table 3	Winding Continuity	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 and 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 1200	34	19
1,201 to 3,200	42	23
3,201 to 10,000	50	29

\*\*NOTE: 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.

## Tin/Lead 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)
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 times of reflow cycle: 2.

### For More Information

PulseR North America  
Headquarters  
311 Sinclair Road,  
Bristol, PA 19007-1524  
U.S.A.

For Global Sales Representatives and Locations Visit:  
<http://www.pulseruggedized.com>

Tel: +1.215. 781. 6400  
Fax: +1.215. 781. 6403

Performance warranty of products offered on this data sheet is limited to the parameters specified. Data is subject to change without notice. Other brand and product names mentioned herein may be trademarks or registered trademarks of their respective owners. © Copyright, 2019. PulseR,LLC. All rights reserved.