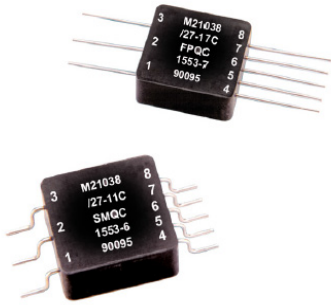


# MIL-STD-1553 Transformers

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

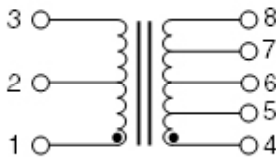
## Summary Performance Specifications

Impedance	(see next page)
Drop	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

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

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

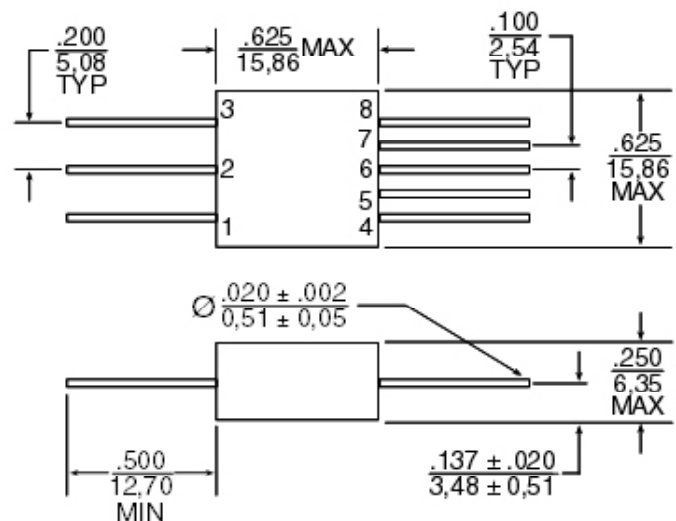
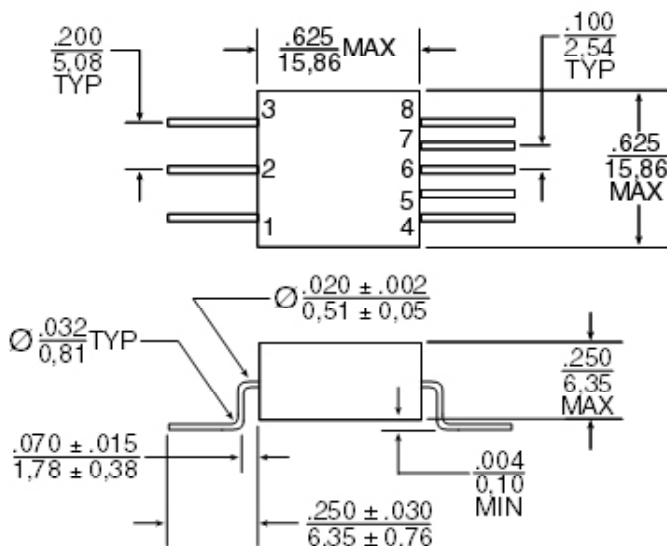
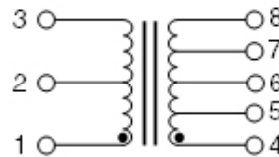
### Package B



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

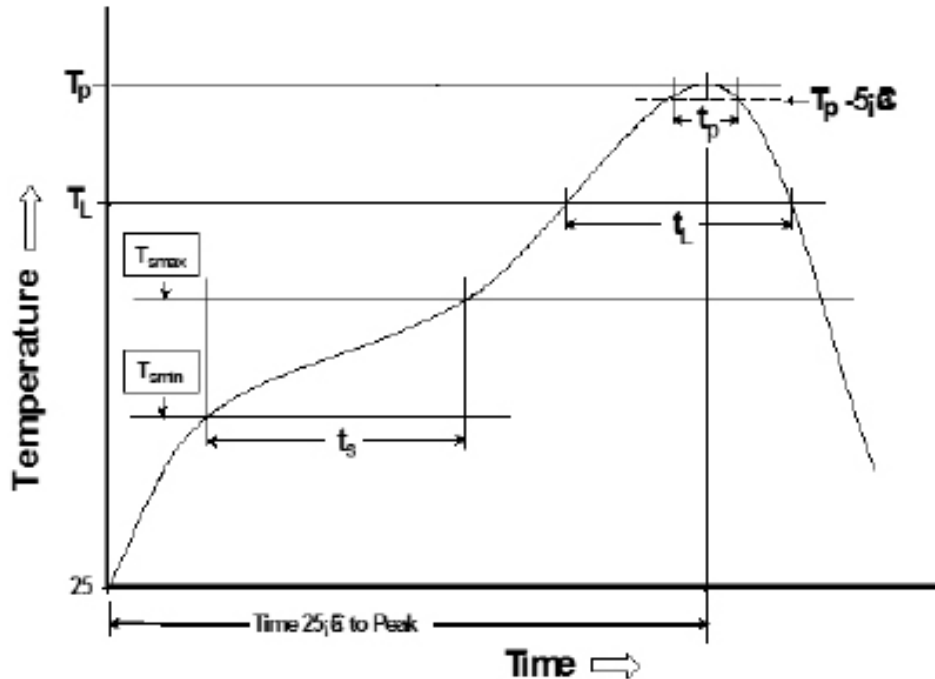
Table 1 — Group A Inspection					
Level "C"***		Level "M"		Level "T"	
Tests	Sampling Plan	Tests	Sampling Plan	Tests	Sampling Plan
N/A	N/A	Electrical Characteristics per MIL-PRF-21038/27	Sample per Table 3	Thermal Shock	100%
N/A	N/A	Visual and Mechanical Inspection	Sample per Table 3	Winding Continuity	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

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