

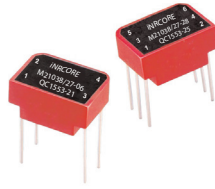
MIL-STD-1553 TRANSFORMERS

Single Ratio THT QPL Pulse Transformers

Ruggedized



iNRCORE FAMILY OF BRANDS



- ⊙ Certified QPL MIL-STD-1553 applications
- ⊙ Designed, built and tested to MIL-PRF-21038
- ⊙ 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 C: 4-lead (no center tap)
 - ⊙ Package D: 6-lead (center tap)
- ⊙ Moisture Sensitivity Level: 1
- ⊙ Applicable Standards:
 - ⊙ MIL-STD-1553B
 - ⊙ MIL-PRF-21038
 - ⊙ MIL-STD-202

Summary Performance Specifications

Droop	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

Electrical Specifications @ 25°C

Part Number	Level	Military Designation No.	Package	Height MAX	Terminals	Turns Ratio (±3%)	RDC MAX (Ω)	Impedance MIN ¹ (Ω)
				IN. [mm]				
QC1553-20	C	M21038/27-05C	C	0.250 [6.35]	1-2:4-3	1:1.41	1-2 = 2.20 4-3 = 2.70	(4-3) 3,000
Q1553-20	M	M21038/27-05						
QT1553-20	T	M21038/27-05T						
QC1553-21	C	M21038/27-06C	D	0.250 [6.35]	1-5:6-2	1CT:1CT	1-5 = 2.50 6-2 = 2.80	(6-2) 3,000
Q1553-21	M	M21038/27-06						
QT1553-21	T	M21038/27-06T						
QC1553-22	C	M21038/27-07C	D	0.250 [6.35]	1-5:6-2	1CT:1.41CT	1-5 = 2.20 6-2 = 2.70	(6-2) 3,000
Q1553-22	M	M21038/27-07						
QT1553-22	T	M21038/27-07T						
QC1553-23	C	M21038/27-08C	D	0.250 [6.35]	1-5:6-2	1CT:1.66CT	1-5 = 1.50 6-2 = 2.40	(6-2) 3,000
Q1553-23	M	M21038/27-08						
QT1553-23	T	M21038/27-08T						
QC1553-24	C	M21038/27-09C	D	0.250 [6.35]	1-5:6-2	1CT:2CT	1-5 = 1.30 6-2 = 2.60	(6-2) 3,000
Q1553-24	M	M21038/27-09						
QT1553-24	T	M21038/27-09T						
QC1553-25*	C	M21038/27-28C	D	0.250 [6.35]	1-5:6-2	1CT:1.50CT	1-3 = 0.90 6-2 = 2.50	(6-2) 3,000
Q1553-25*	M	M21038/27-28						
QT1553-25*	T	M21038/27-28T						
QC1553-51*	C	M21038/27-29C	D	0.250 [6.35]	1-5:6-2	1CT:1.79CT	1-5 = 0.90 6-2 = 2.50	(6-2) 3,000
Q1553-51*	M	M21038/27-29						
QT1553-51*	T	M21038/27-29T						
QC1553-52*	C	M21038/27-30C	D	0.250 [6.35]	1-5:6-2	1CT:2.50CT	1-5 = 1.00 6-2 = 2.80	(6-2) 3,000
Q1553-52*	M	M21038/27-30						
QT1553-52*	T	M21038/27-30T						

* 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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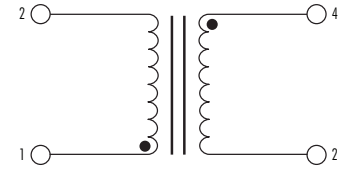
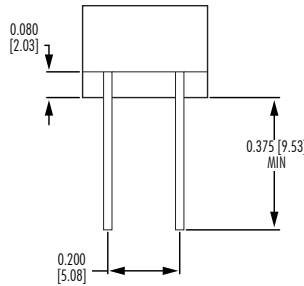
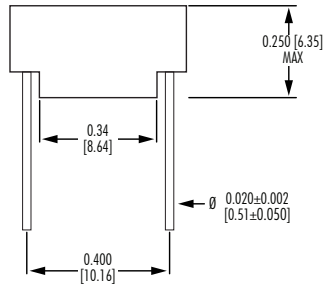
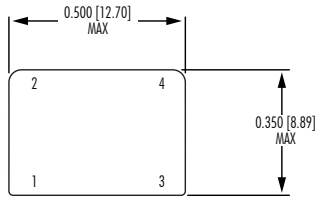
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Mechanics

Electrical Schematics

Package C

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

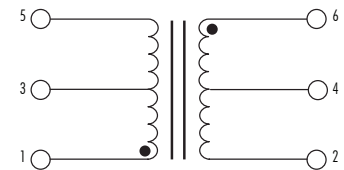
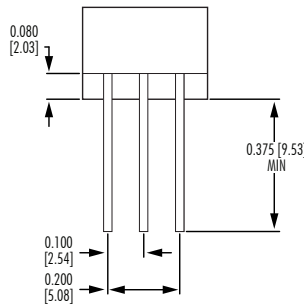
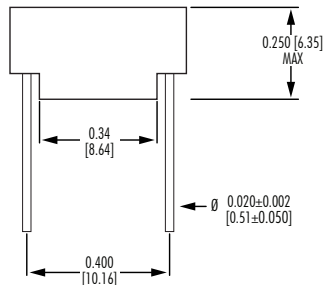
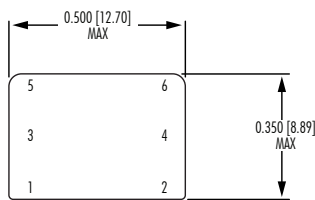


Mechanics

Electrical Schematics

Package D

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



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

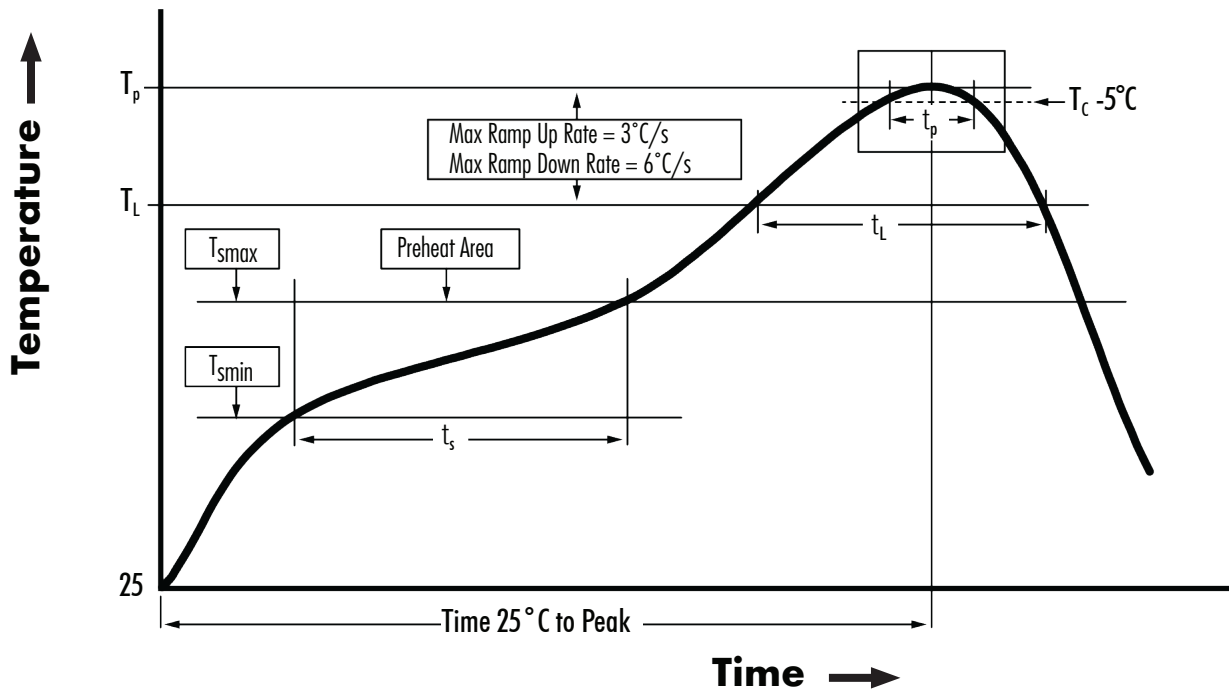
Table 2 - Group B Inspection					
Level "C" **		Level "M"		Level "T"	
Tests	Sampling Plan	Tests	Sampling Plan	Tests	Sampling Plan
N/A	N/A	Dielectric Withstanding Voltage	Sample per Table 3	Dielectric Withstanding Voltage	Sample per Table 3
N/A	N/A	Insulation Resistance	Sample per Table 3	Insulation Resistance	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.

