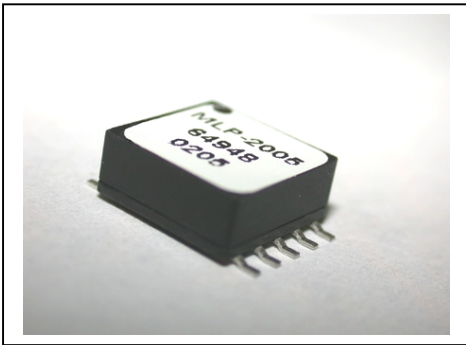


## MINIATURE LOW-PROFILE 0.185" MAXIMUM HEIGHT MIL-STD-1553 SMT TRANSFORMERS



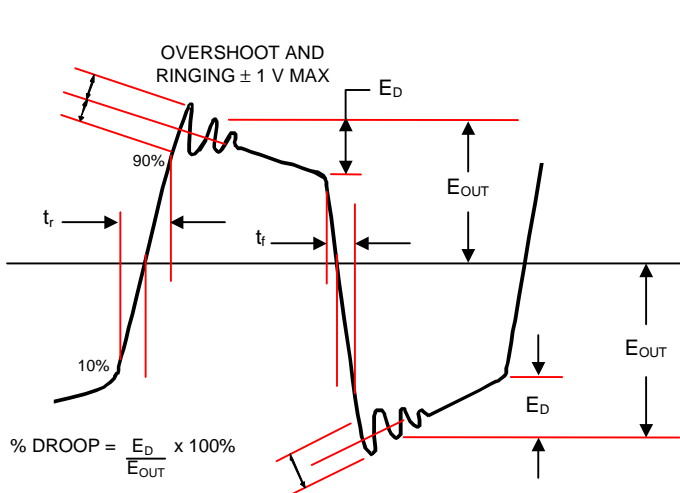
### FEATURES

- *Miniature package requires less board space*
- *Minimal height requirements*
- *Surface Mount*
- *For use with MIL-STD-1553A and B, McAir A-5690, A-5232, and A-4905*
- *Withstands conventional IR/Convection Reflow process*
- *Low Profile*
- *-55°C to +105°C Operating Temperature Range*
- *Built and Tested to MIL-PRF-21038 and MIL-STD-202*

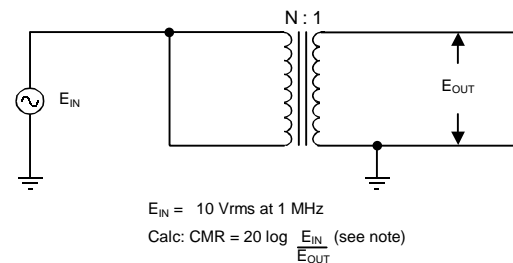
### DESCRIPTION AND APPLICATIONS

The military data bus specification, MIL-STD-1553, has brought about the need for versatile pulse transformers that meet all the electrical requirements of Manchester II serial bi-phase data transmission. The MLP-2000 series of transformers provide the turns ratio configurations, component isolation, and common mode rejection ratio characteristics necessary for MIL-STD-1553A and B compliance.

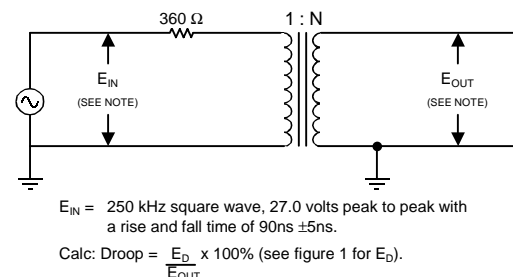
The step-up and step-down ratios that are available with the MLP-2000 series complement DDC's entire MIL-STD-1553 product line and are compatible with competitors' drivers, receivers, and transceivers. These transformers are low-profile and provide a 70% reduction in board space compared to surface mount QPL pulse transformers. They are encapsulated and meet the performance requirements of MIL-PRF-21038. Sinusoidal or trapezoidal waveforms are accurately processed, making the MLP-2000 series of transformers an excellent choice for any MIL-STD-1553A or B application.



**FIGURE 1. WAVEFORM INTEGRITY**



**FIGURE 2. CIRCUIT FOR COMMON MODE REJECTION**



**FIGURE 3. CIRCUIT FOR WAVEFORM INTEGRITY**

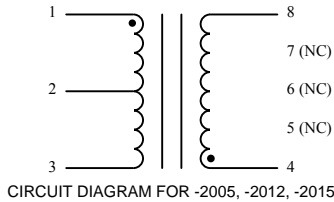
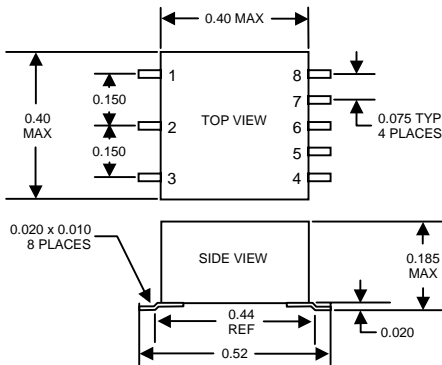
Note: Input to be applied and output to be measured for all dash numbers are as shown. N represents highest turns winding in each test.

**TABLE 1. GENERAL SPECIFICATIONS**

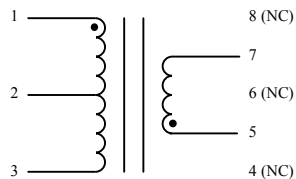
PARAMETER	UNIT	VALUE	REMARK
Case	-	-	Flame Resistant, Diallyl Phthalate
Terminals	-	-	Tinned Alloy 42
Weight	gm.	1.25 max.	
Terminal Strength	lbs.	2	2 pounds applied force, Method 211, MIL-STD-202, Test Condition A
Dielectric Withstanding Voltage	Vrms	100	Method 301, MIL-STD-202
Life (expectancy "X")	Hrs.	10,000 min.	In accordance with MIL-PRF-21038
Insulation Resistance	MΩ	1,000 min.	At 250 Vdc using method 302, test condition B, MIL-STD-202
Pulse Width (output pulse)	μs	2	Tested using FIGURE 3 with resulting FIGURE 1 waveform
Overshoot	V	± 1 max	Tested using FIGURE 3 with resulting FIGURE 1 waveform
Rise Time (output pulse)	ns	-	Tested using FIGURE 3 with resulting FIGURE 1 waveform, See respective ELECTRICAL CHARACTERISTICS TABLE
Common-Mode Rejection	dB	45	Tested using FIGURE 2
Operating Temperature Range	°C	-55 to +105	-
Drop	%	≤ 20	Tested using FIGURE 3 with resulting FIGURE 1 waveform
DC Resistance	Ω	-	See respective ELECTRICAL CHARACTERISTICS TABLE
Input Impedance	Ω	-	See respective ELECTRICAL CHARACTERISTICS TABLE

The information in this data sheet is believed to be accurate; however, no responsibility is assumed by Beta Transformer Technology Corporation for its use, and no license or rights are granted by implication or otherwise in connection therewith. Specifications are subject to change without notice.

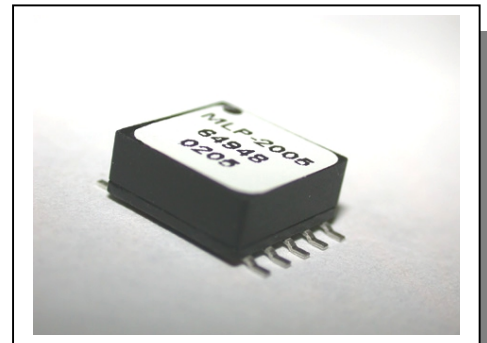
**CONFIGURATION**



CIRCUIT DIAGRAM FOR -2005, -2012, -2015



CIRCUIT DIAGRAM FOR -2205, -2212, -2215



- NOTES:  
 (1) Dimensions are in inches.  
 (2) Tolerance (unless specified otherwise):  
 .xx is ± .010 inches.  
 .xxx is ± .005 inches.

**TABLE 2. ELECTRICAL CHARACTERISTICS**

BETA P/N	TURNS RATIO ± 3%	PRIMARY	SECONDARY	DC RESISTANCE Ω (MAX)	OUTPUT RISE TIME (MAX)	IMPEDANCE Ω (MIN)	
						75KHZ TO 249KHZ	250KHZ TO 1MHZ
MLP-2005	1 : 2.50	1-3	4-8	(1-3) 1.5 (4-8) 3.5	250 ns	(4-8) 3,000	(4-8) 4,000
MLP-2012	1.25 : 1	1-3	4-8	(1-3) 2.4 (4-8) 1.5	150 ns	(1-3) 3,000	(1-3) 4,000
MLP-2015	1.41 : 1	1-3	4-8	(1-3) 2.7 (4-8) 2.2	150 ns	(1-3) 5,000	(1-3) 7,200
MLP-2205	1 : 1.79	1-3	5-7	(1-3) 1.5 (5-7) 2.5	150 ns	(5-7) 3,000	(5-7) 4,000
MLP-2212	1.66 : 1	1-3	5-7	(1-3) 2.4 (5-7) 1.5	150 ns	(1-3) 3,000	(1-3) 4,000
MLP-2215	2.00 : 1	1-3	5-7	(1-3) 2.6 (5-7) 1.3	150 ns	(1-3) 5,000	(1-3) 7,200

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