

FEATURES

- Maxim Compatible
- 3.3V and 5V Versions
- Isolation to 4kV
- Frequency Range to 500kHz
- Toroidal Construction
- Industrial Standard Pinout
- UL 94V-0 Package Material
- Fully Encapsulated
- Low Profile
- Surface Mount Available

DESCRIPTION

The 78253 series of converter transformers are specifically designed for use with the MAX253 chip set to provide isolated power supplies. The 5V version can supply 1W and the 3.3V version can supply 500mW. A centre tapped secondary winding allows for full bridge, half bridge or voltage doubling. The surface mount devices are fully compatible with CECC00802 to 280°C which allows them to be placed and reflowed with IC's thus reducing time and cost in production.

SELECTION GUIDE

	Input Voltage	Output Voltage	Output Current	Isolation Voltage	Turns Ratio	Package Style
Order Code	(V)	(V)	(mA Max)	(VDC)		
78253/35	3.3	5.0	100	1500	1: 5	DIP
78253/35M						SM
78253/55	5.0	5.0	200	1500	1:1.31	DIP
78253/55M						SM
78253/35V	3.3	5.0	100	4000	1: 5	DIP
78253/35MV						SM
78253/55V	5.0	5.0	200	4000	1:1.36	DIP
78253/55MV						SM

78253/35(M) CHARACTERISTICS

Parameter	Conditions	MIN	TYP	MAX	Units
Primary Inductance, L_p	100kHz, 250mV	0.30	0.38	0.46	mH
Secondary Inductance, L_s	100kHz, 250mV	1.60	2.00	2.40	mH
Leakage Inductance, L_L	100kHz, 250mV		0.30	1.00	μ H
Interwinding Capacitance, C_{ww}	100kHz, 250mV		30	50	pF
D.C. Resistance, R_{DC}	>0.1VDC		0.40	1.00	
Volt-time Product, E_T	5kHz, 5V	50	80		V μ s

78253/55(M) CHARACTERISTICS

Parameter	Conditions	MIN	TYP	MAX	Units
Primary Inductance, L_p	100kHz, 250mV	0.60	0.83	1.10	mH
Secondary Inductance, L_s	100kHz, 250mV	1.10	1.40	1.70	mH
Leakage Inductance, L_L	100kHz, 250mV		0.35	1.00	μ H
Interwinding Capacitance, C_{ww}	100kHz, 250mV		30	50	pF
D.C. Resistance, R_{DC}	>0.1VDC		0.70	1.50	
Volt-time Product, E_T	5kHz, 5V	50	65		V μ s

78253/35(M)V CHARACTERISTICS

Parameter	Conditions	MIN	TYP	MAX	Units
Primary Inductance, L_p	100kHz, 20mV	110	142	185	μ H
Secondary Inductance, L_s	100kHz, 20mV	550	710	850	μ H
Leakage Inductance, L_L	100kHz, 250mV		3.00	5.00	μ H
Interwinding Capacitance, C_{ww}	100kHz, 250mV		4.20	8.00	pF
D.C. Resistance, R_{DC}	>0.1VDC		0.30	0.50	
Volt-time Product, E_T	5kHz, 5V	30	42		V μ s

78253/55(M)V CHARACTERISTICS

Parameter	Conditions	MIN	TYP	MAX	Units
Primary Inductance, L_p	100kHz, 20mV	190	240	310	μ H
Secondary Inductance, L_s	100kHz, 20mV	350	444	540	μ H
Leakage Inductance, L_L	100kHz, 250mV		5.20	8.00	μ H
Interwinding Capacitance, C_{ww}	100kHz, 250mV		4.20	8.00	pF
D.C. Resistance, R_{DC}	>0.1VDC		0.40	0.60	
Volt-time Product, E_T	5kHz, 5V	25	32		V μ s

ABSOLUTE MAXIMUM RATINGS

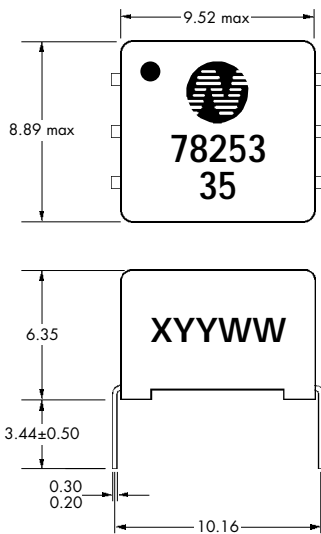
Operating free air temperature range	-40°C to 85°C
Storage temperature range	-50°C to 125°C
Lead Temperature 1.5mm from case for 10 seconds	300°C
Peak current I_{PK}	400mA
Isolation voltage 78253/XX(M) (flash tested for 1 second)	1500VDC
Isolation voltage 78253/XX(M)V (flash tested for 1 second)	4000VDC

78253 SERIES

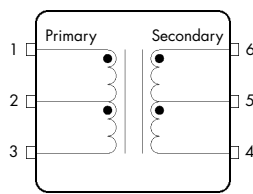
MAX253 Compatible Converter Transformers

MECHANICAL DIMENSIONS

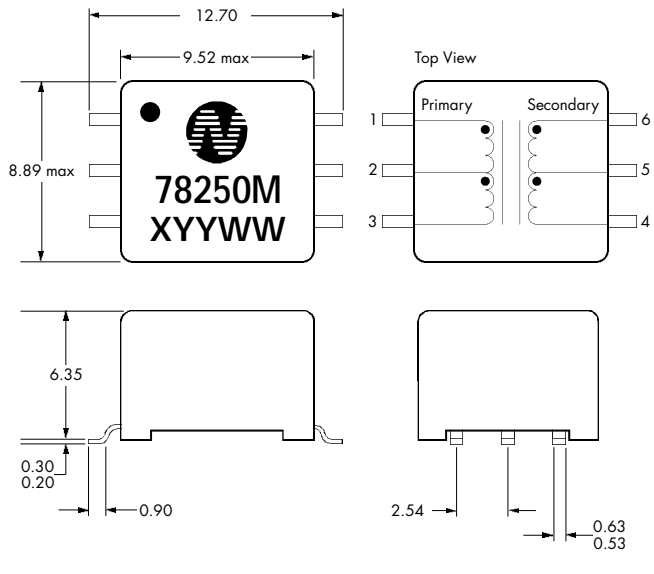
6 Pin DIP



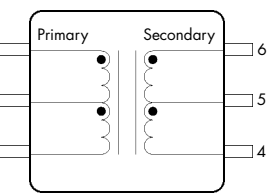
Top View



6 Pin SM



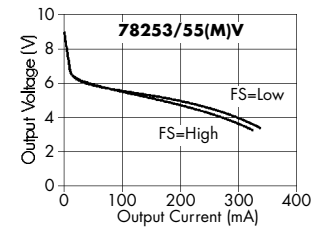
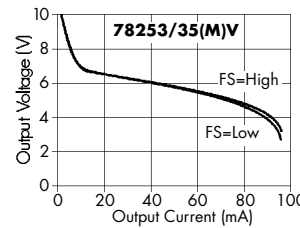
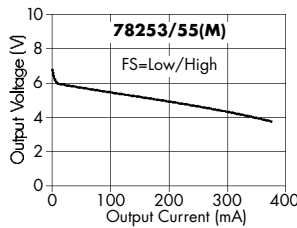
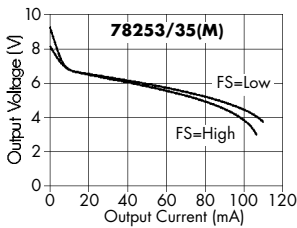
Top View



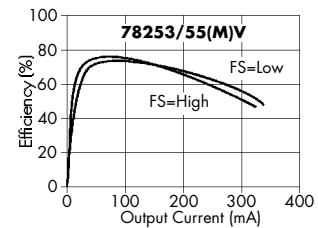
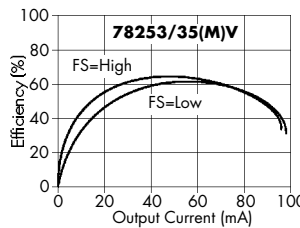
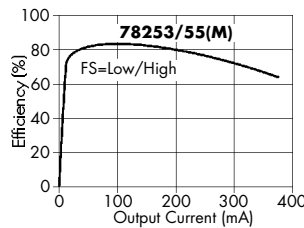
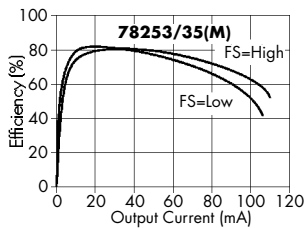
All dimensions in mm XX.XX ±0.25mm. All pins on a 2.54mm pitch and within ±0.25mm of true position.

TYPICAL CHARACTERISTICS (VOLTAGE CURVES)

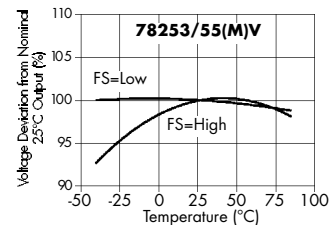
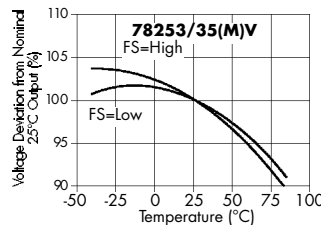
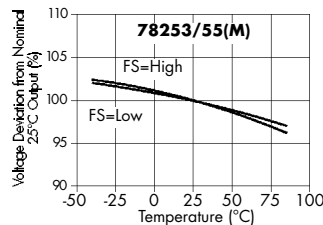
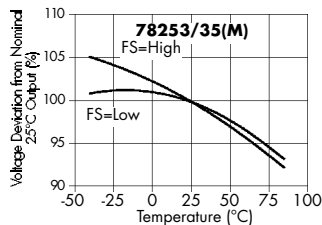
VOLTAGE CURVES



EFFICIENCY CURVES



VOLTAGE DEVIATION



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