

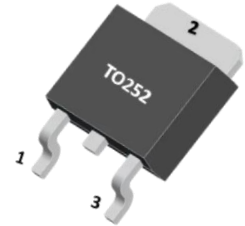
DESCRIPTION

The WTM20N03VD meet the ROHS and Green

Product requirement with full function reliability approved.

FEATURE

- * Ambient operating temperature: 175° C
- * Low drain-source and low on-resistance
- * Logic level
- * Perfect gate charge $\times$ RDS(ON) product
- * Superior thermal resistance
- * Avalanche rated
- * Specified dv/dt
- * For fast switching buck converters



MARKING

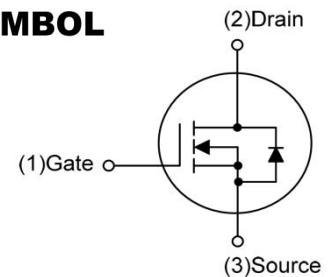


WPM : LOGO

20N03VD=Device Code

XXX YYWW=Date Code

SYMBOL



ABSOLUTE MAXIMUM RATINGS($T_A=25^\circ\text{C}$, unless otherwise specified.)

SYMBOL	PARAMETER		VALUE	UNIT
VDSS	Drain-Source Voltage		30	V
VGSS	Gate Source Voltage		± 20	V
ID	Continuous Drain Current ($T_C=25^\circ\text{C}$)		20	A
IDM	Pulsed Drain Current ($T_C=25^\circ\text{C}$)		120	A
EAS	Avalanche Energy	Single Pulsed (Note 3)	15	mJ
EAR		Repetitive (Note 2)	6	mJ
PD	Maximum Power Dissipation (Note 1)	TO-252	60	W
TJ	Storage Temperature		150	$^\circ\text{C}$
TSTG	Thermal Resistance From Junction To Ambient		-55~150	$^\circ\text{C}$
RθJA	Thermal Resistance from Junction to Ambient	TO-252	100	$^\circ\text{C/W}$
RθJC	Thermal Resistance From Junction To Case	TO-252	2.5	$^\circ\text{C/W}$

Notes: 1.Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

2.Repetitive Rating: Pulse width limited by maximum junction temperature.

3.ID =15 A, VDD =25 V, RG = 25 Ω , Starting TJ = 25 $^\circ\text{C}$.

4.IS = 20 A, VDS =24 V, di/dt =100A/ μs , TJ(MAX) = 175 $^\circ\text{C}$.

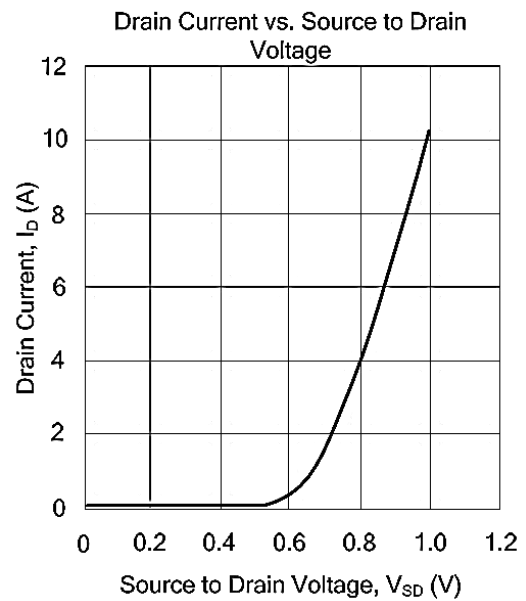
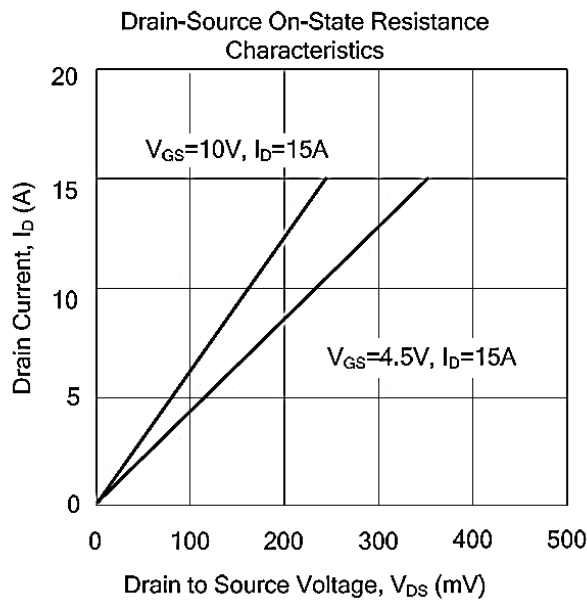
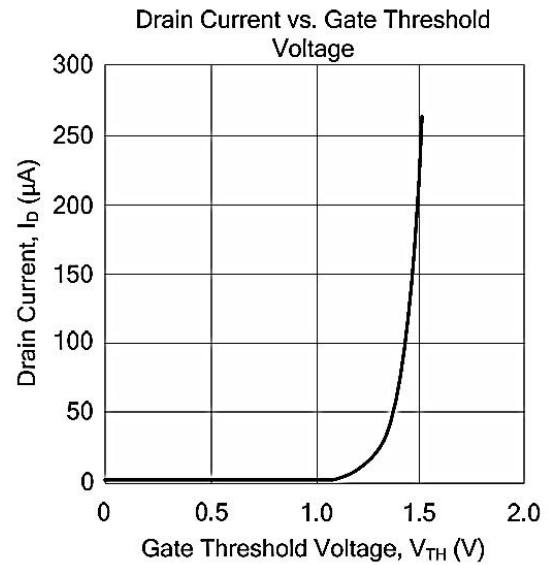
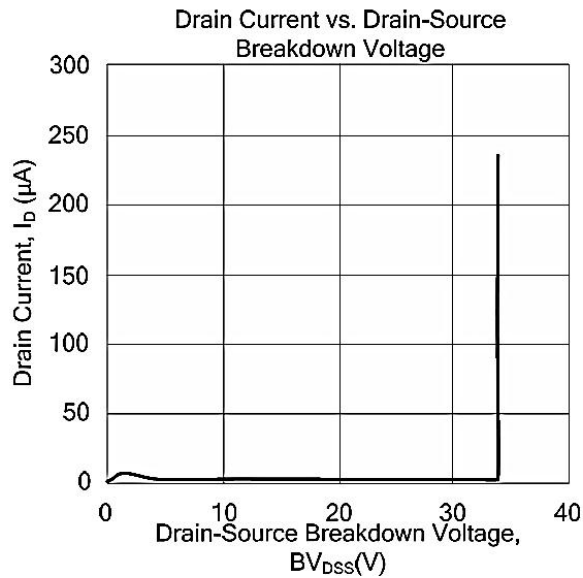
ELECTRICAL CHARACTERISTICS (TA=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	V(BR)DSS	VGS=0V, ID=250μA	30			V
Zero gate voltage drain current	IDSS	VDS=30V,VGS=0V		0.01	1	μA
Gate-body leakage current	IGSS	VGS=±20V, VDS=0V			±100	nA
ON CHARACTERISTICS						
Drain-source on-state resistance	RDS(ON)	VGS=10V, ID=15A		15.5	20	mΩ
		VGS=4.5V, ID=15A		22.9	31	
Gate Threshold Voltage	VGS(TH)	VGS=VDS,ID=250μA	1.2	1.6	2	V
DYNAMIC PARAMETERS						
Input Capacitance	CISS	VGS=0V, VDS=25V f=1.0MHz		530	700	pF
Output Capacitance	COSS			200	275	
Reverse Transfer Capacitance	CRSS			60	90	
Gate Resistance	RG			1.3		Ω
SWITCHING PARAMETERS						
Total gate charge	Qg	VDS=15V,VGS=10V ID=10A,IG=1mA (Note 1,2)		8.4	11	nC
Gate-source charge	Qgs			2.5	3.1	
Gate-drain charge	Qgd			6.4	9.6	
Turn-On Delay Time	td(on)	VDD=15V, ID=15A VGS=10V, RG=12.7Ω		6.2	9.3	nS
Turn-On Rise time	tr			11	17	
Turn-Off Delay Time	td(off)			23	34	
Turn-Off Fall time	tr			18	27	
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
Continuous drain-source diode forward current(Note1)	IS				20	A
Pulsed drain-source diode forward current(Note 2)	ISM				120	A
Drain-source diode forward voltage(Note 4)	VSD	IS=20A,VGS=0V		1.1	1.4	V
Reverse Recovery Time	trr	VR=15V,IF = IS		15	18	ns
Reverse Recovery Charge	Qrr	dI/dt =100A/μs		2	3	nC

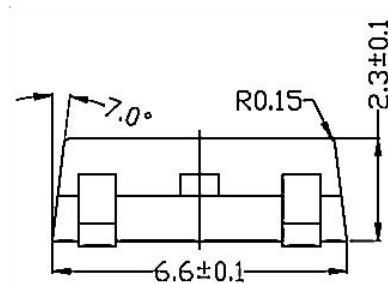
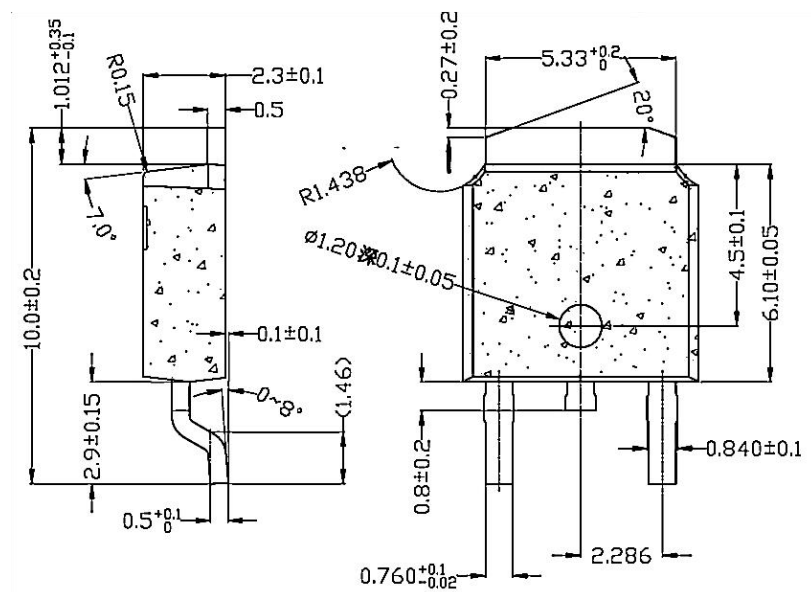
Notes:

1. Pulse Test: Pulse width ≤ 300μs, Duty cycle ≤ 2%.
2. Essentially independent of operating temperature.

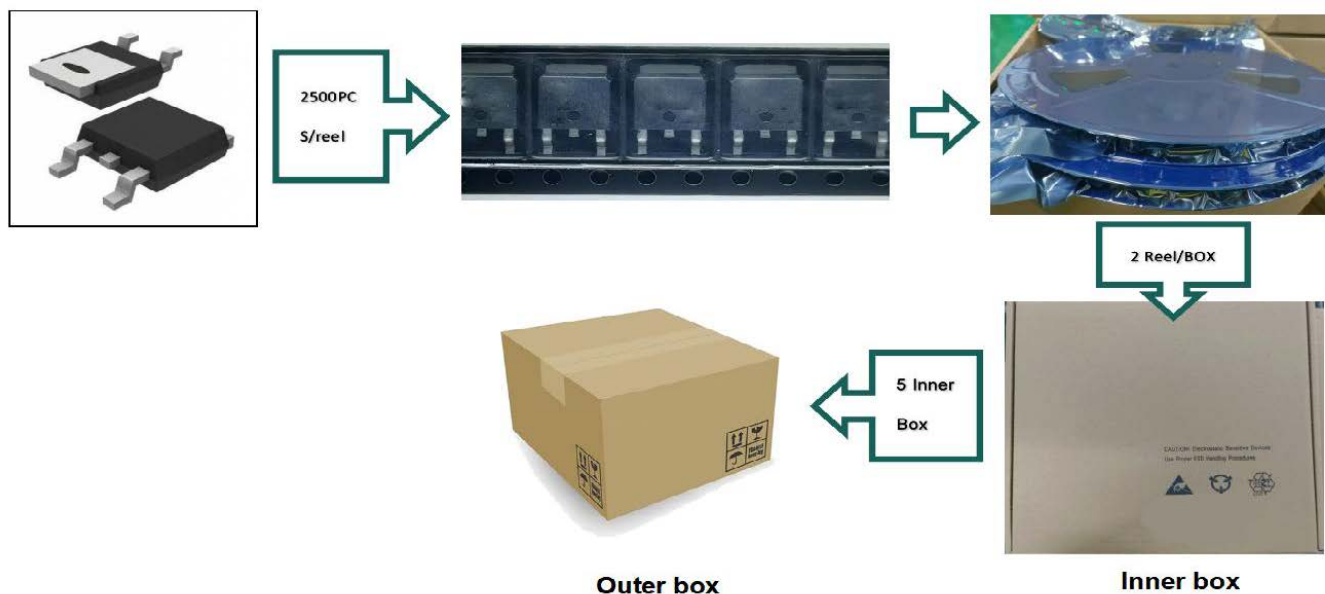
TYPICAL CHARACTERISTICS



TO - 252 PACKAGE OUTLINE DIMENSIONS



TO - 252 PACKING INFORMATION



Package version	Reel dimensions $\Phi \times H$ (mm)	Per Reel (pcs)	Reels per box	Inner box dimensions $L \times W \times H$ (mm)	Outer box (pcs)	Outer box dimensions $L \times W \times H$ (mm)
T0-252	$\Phi 330 \times 20$	2500	2	360*340*50	25000	375*375*280

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