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The ZM200P02T combines advanced trench MOSFET technology with a low resistance package to provide extremely low  $R_{DS(ON)}$ .

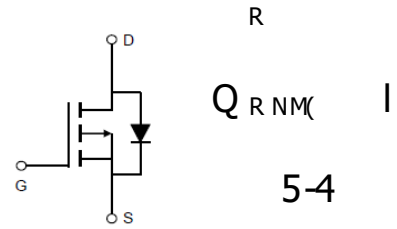
**2**

Trench technology

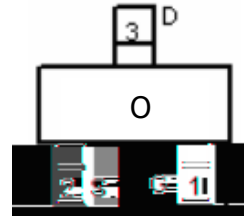
$R_{DS(ON)}$  to minimize conductive loss

fast switching

Load Switches  
DC/DC

**Product Summary**


5-4



RNS 2 2

Part NO.	ZM200P02T
Marking	ZM200P02
Packing Information	REEL TAPE
Basic ordering unit (pcs)	3000

$T_C = 25$

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	-20	V
Gate-Source Voltage	$V_{GS}$	$\pm 8$	V
Continuous Drain Current	$I_{D@TC=25}$	-6.5	A
	$I_{D@TC=75}$	-4.9	A
	$I_{D@TC=100}$	-4.1	A
Pulsed Drain Current	$I_{DM}$	-15	A
Total Power Dissipation	$P_D$	1.5	W
Total Power Dissipation	$P_{D@TA=25}$	0.7	W
Operating Junction Temperature	$T_J$	-55 to 150	
Storage Temperature	$T_{STG}$	-55 to 150	
Single Pulse Avalanche Energy	$E_{AS}$	45	mJ

**Thermal resistance**

Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal resistance, junction - case	R <sub>thJC</sub>	-	-	80	° C/W
Thermal resistance, junction - ambient	R <sub>thJA</sub>	-	-	180	° C/W
Soldering temperature, wavesoldering for 10s	T <sub>sold</sub>	-	-	265	° C

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =-250uA	-20			V
Gate Threshold Voltage	V <sub>GS(TH)</sub>	V <sub>GS</sub> =V <sub>DS</sub> , I <sub>D</sub> =-250uA	-0.3		-1.2	V
Drain-Source Leakage Current	I <sub>DSS</sub>	V <sub>DS</sub> =-20V, V <sub>GS</sub> =0V			1.0	uA
Gate- Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±8V, V <sub>DS</sub> =0V			100	nA
Static Drain-source On Resistance	Q <sub>RNM</sub>	V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-3A				
		V <sub>GS</sub> =-2.5V, I <sub>D</sub> =-2A				
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-2A				
Source-drain voltage	V <sub>SD</sub>	I <sub>S</sub> =-3A				

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Input capacitance	C <sub>iss</sub>	f = 1MHz	-	1350	-	pF
Output capacitance	C <sub>oss</sub>		-	194	-	
Reverse transfer capacitance	C <sub>rss</sub>		-	148	-	

**Gate Charge characteristics(T<sub>a</sub> = 25 )**

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Total gate charge	Q <sub>g</sub>	V <sub>DD</sub> =-15V	-	14	-	nC
Gate - Source charge	Q <sub>gs</sub>	I <sub>D</sub> = -4A	-	6	-	
Gate - Drain charge	Q <sub>gd</sub>	V <sub>GS</sub> =- 4.5V	-	8	-	

Note:

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Device mounted on FR-4 substrate PC board, 2oz copper, with thermal bias to bottom layer 1inch square copper plate

Fig.1 Gate-Charge Characteristics

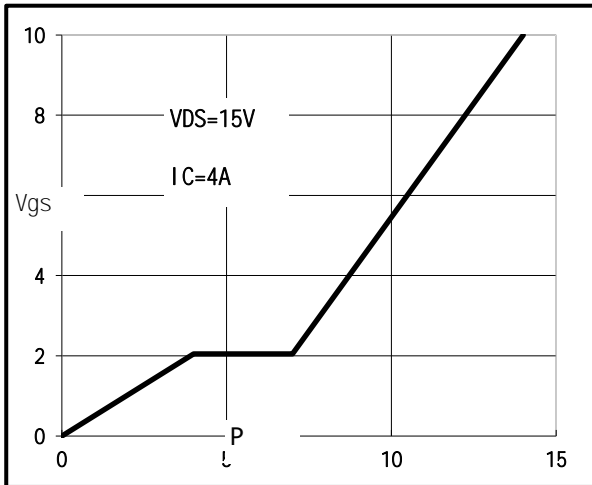


Fig.2 Capacitance Characteristics

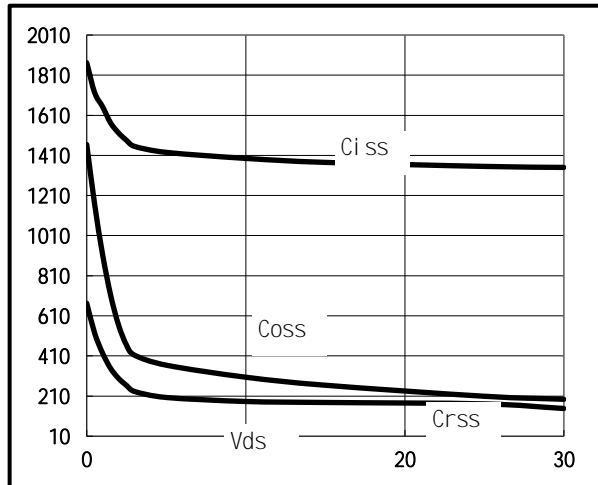


Fig.3 Power Dissipation Derating Curve

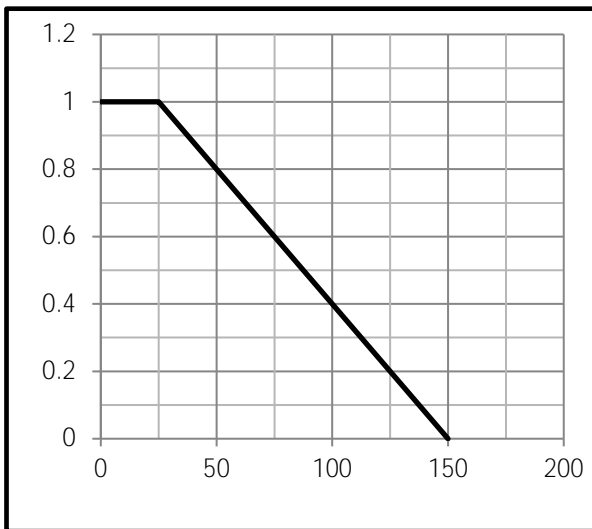


Fig.4 Typical output Characteristics

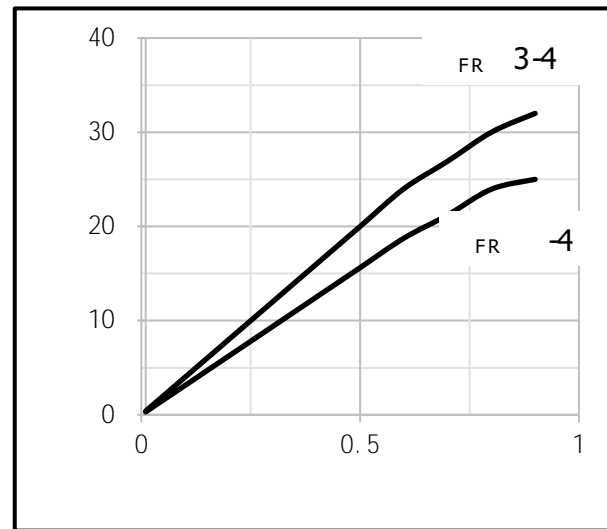


Fig.5 Threshold Voltage V.S Junction Temperature

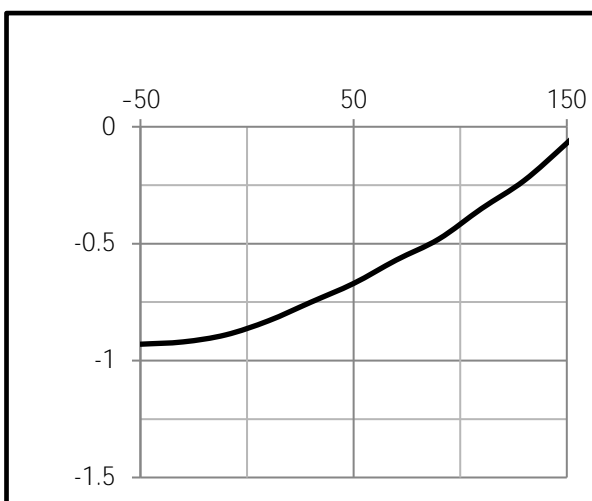
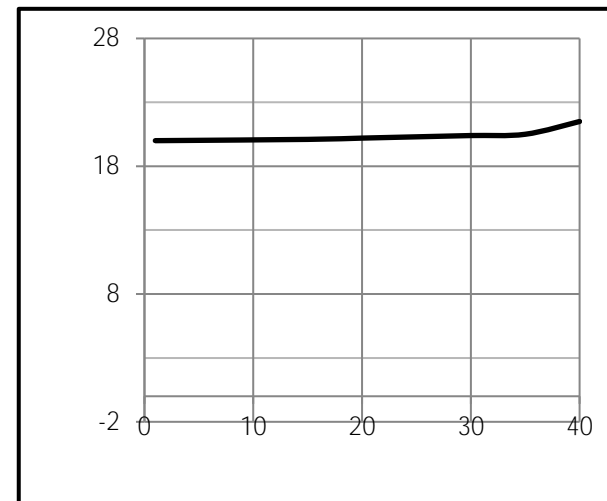


Fig.6 Resistance V.S Drain Current



6 NmQdr rs md R F sd Rnt d ns d

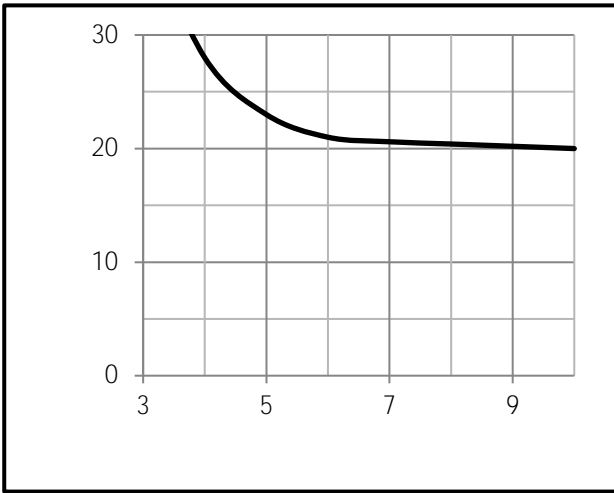


Fig.9 Switching Time Measurement Circuit

7 NmQdr rs md R ItmsnmSdl od st d

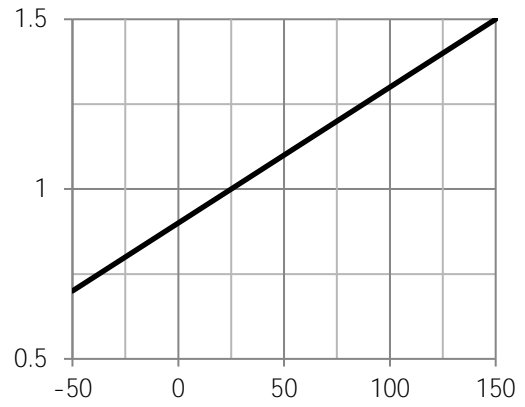


Fig.10 Gate Charge Waveform

Fig.11 Switching Time Measurement Circuit

Fig.12 Gate Charge Waveform



(SOT23)

Unit mm

