

General Description

The ZM240P03S combines advanced trench MOSFET technology with a low resistance package to provide extremely low $R_{DS(ON)}$.

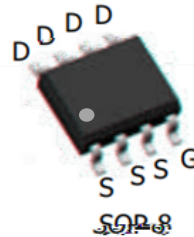
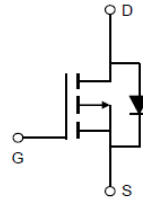
Features

- Trench technology
- $R_{DS(ON)}$ to minimize conductive loss
- fast switching

Application

nd Synchronous Rectifier

Product Summary



Ordering Information:

Part NO.	ZM240P03S
Marking	ZM240P03
Packing Information	REEL TAPE
Basic ordering unit (pcs)	4000

Absolute Maximum Ratings $T_C = 25$

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	$I_D @ T_C = 25$	-6	A
	$I_D @ T_C = 75$	-4.6	A
	$I_D @ T_C = 100$	-3.8	A
Pulsed Drain Current	I_{DM}	-15	A
Total Power Dissipation	$P_D @ T_C = 25$	3.6	W
Total Power Dissipation	$P_D @ T_A = 25$	0.69	W
Operating Junction Temperature	T_J	-55 to 150	
Storage Temperature	T_{STG}	-55 to 150	
Single Pulse Avalanche Energy	E_{AS}	25	mJ

Thermal resistance

Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal resistance, junction - case	R_{thJC}	-	-	34	V C/W
Thermal resistance, junction - ambient	R_{thJA}	-	-	180	V C/W
Soldering temperature, wavesoldering for 10s	T_{sold}	-	-	265	V C

Electronic Characteristics

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS} = 0V, I_D = -250\mu A$	-30			V
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{GS} = V_{DS}, I_D = -250\mu A$	-1.0		-2.5	V
Drain-Source Leakage Current	I_{DSS}	$V_{DS} = -30V, V_{GS} = 0V$			-1.0	μA
Gate- Source Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			100	nA
Static Drain-source On Resistance		$V_{GS} = -10V, I_D = -6A$				
		$V_{GS} = -4.5V, I_D = -5A$				
Forward Transconductance	g_{FS}	$V_{DS} = -10V, I_D = -5A$				
Source-drain voltage	V_{SD}	$I_S = -6A$				

Electronic Characteristics

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Input capacitance	C_{iss}	$f = 1MHz$	-	960	-	pF
Output capacitance	C_{oss}		-	201	-	
Reverse transfer capacitance	C_{rss}		-	115	-	

Gate Charge characteristics ($T_a = 25$)

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Total gate charge	Q_g	$V_{DD} = -25V$ $I_D = -6A$ $V_{GS} = -10V$	-	10	-	nC
Gate - Source charge	Q_{gs}		-	4	-	
Gate - Drain charge	Q_{gd}		-	6	-	

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

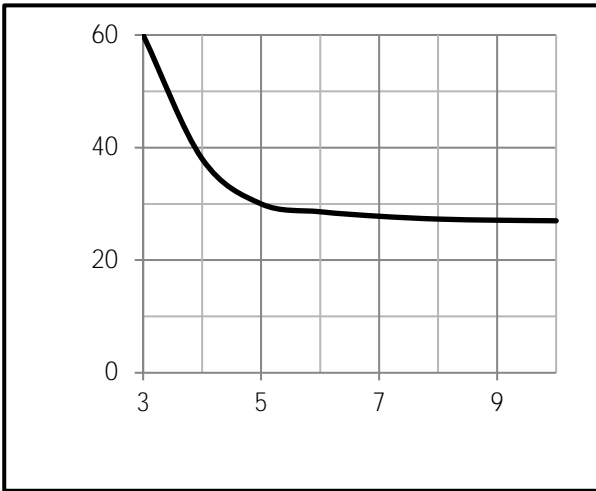


Fig.9 Switching Time Measurement Circuit

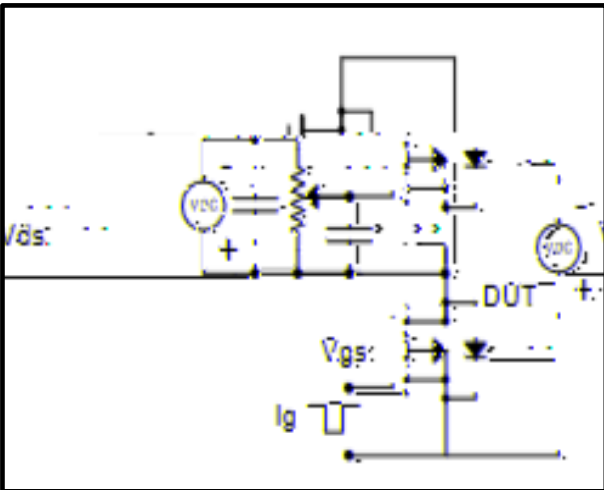


Fig.11 Switching Time Measurement Circuit

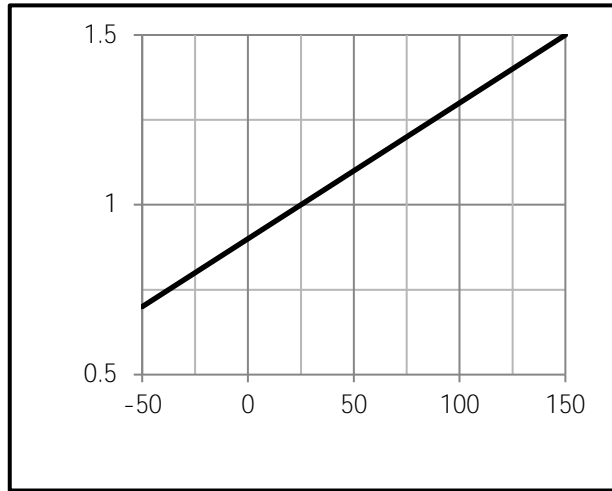
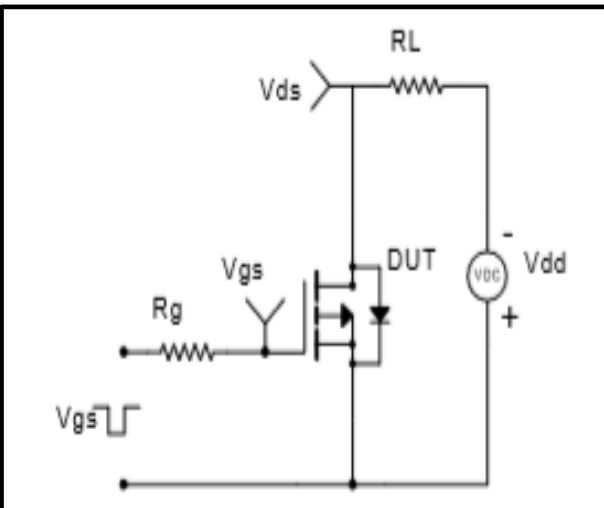


Fig.10 Gate Charge Waveform

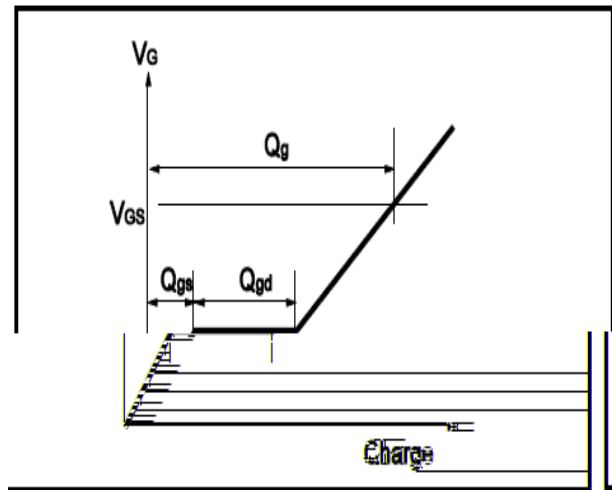
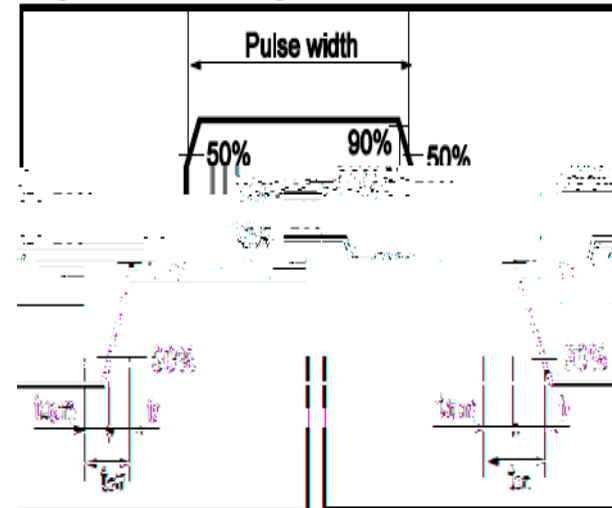


Fig.12 Gate Charge Waveform



Dimensions(SOP8)

Unit mm

SYMBOL	min	TYP	max	SYMBOL	min		max
A	4.80		5.00	C	1.30		1.50
A1	0.37		0.47	C1	0.55		0.75
A2		1.27		C2	0.55		0.65
A3		0.41		C3	0.05		0.20
B	5.80		6.20	C4	0.19	0.20	0.23
B1	3.80		4.00	D		1.05	
B2		5.00		D1			