

### General Description

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

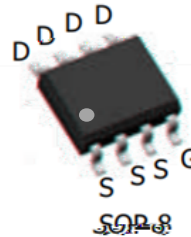
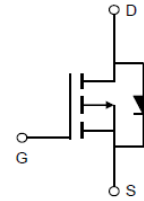
### Features

- 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	$V_{GS}$	$\pm 20$	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	$\text{v C/W}$
Thermal resistance, junction - ambient	$R_{thJA}$	-	-	180	$\text{v C/W}$
Soldering temperature, wavesoldering for 10s	$T_{sold}$	-	-	265	$\text{v C}$

**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	$\mu A$
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	$Q_g$	$V_{DD} = -25V$	-	10	-	nC
Gate - Source charge	$Q_{gs}$	$I_D = -6A$	-	4	-	
Gate - Drain charge	$Q_{gd}$	$V_{GS} = -10V$	-	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



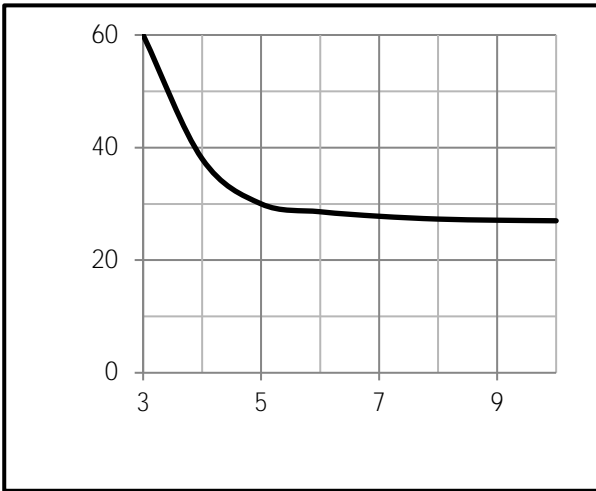


Fig.9 Switching Time Measurement Circuit

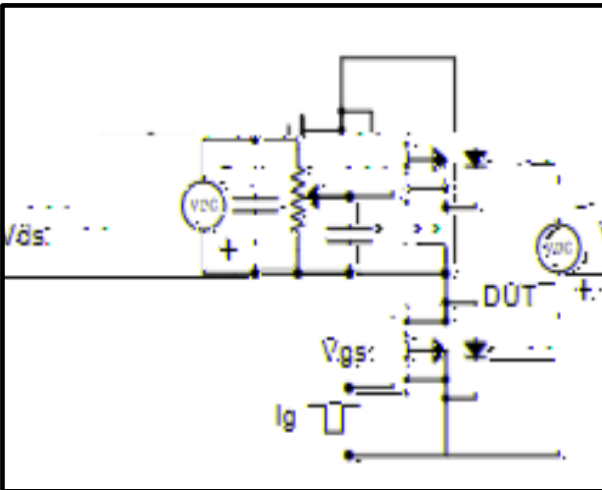


Fig.11 Switching Time Measurement Circuit

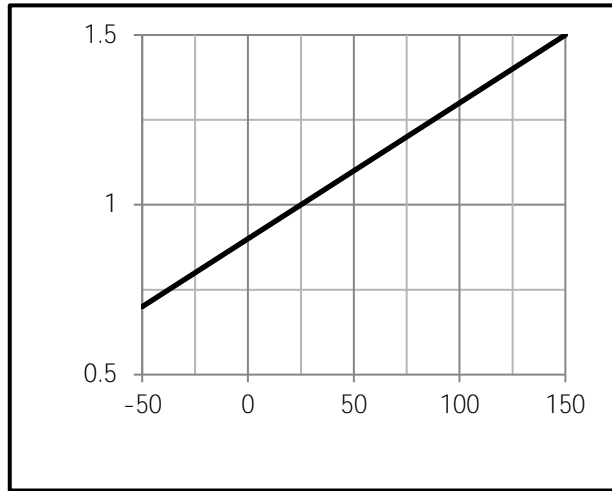
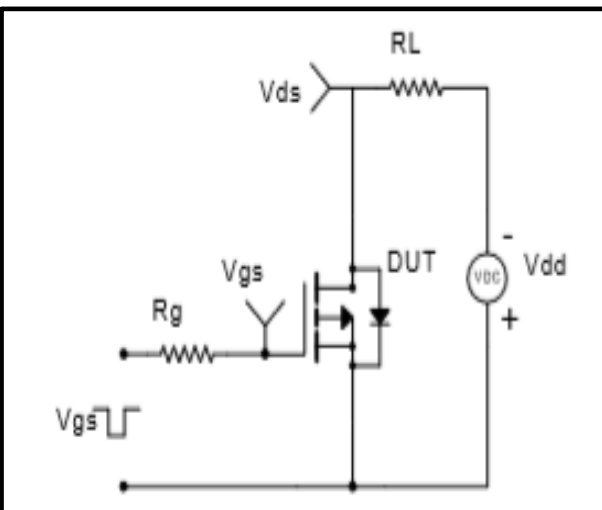


Fig.10 Gate Charge Waveform

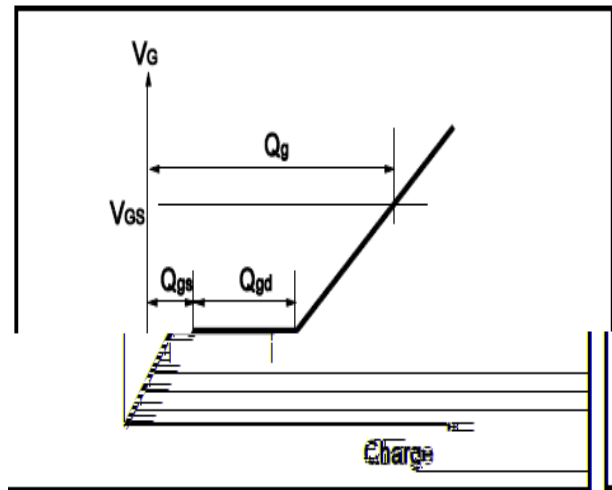
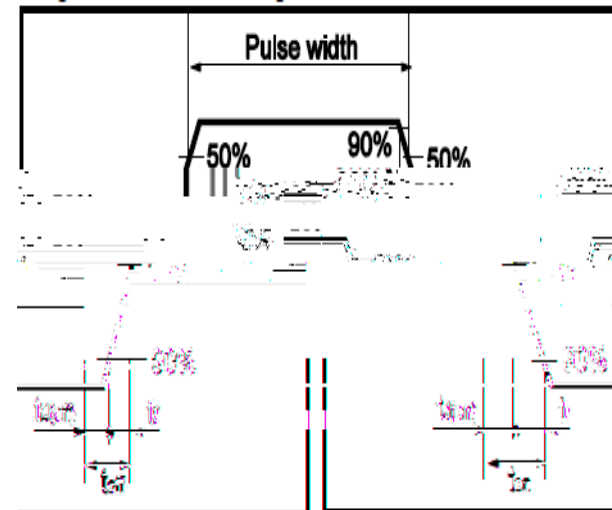


Fig.12 Gate Charge Waveform



**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			