TECH PUBLIC
台舟电子

TPM4016PS8-3

P-Channel Enhancement Mode Power MOSFET

www.sot23.com.tw

General Features

- V_{DS} = - 40V,I_D =12A
  $R_{DS(ON)}$ < 18mΩ @ V_{GS}=10V

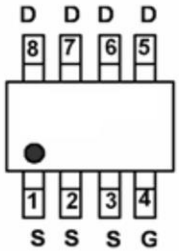
Application

- High power and current handing capability
- Lead free product is acquired
- Surface mount package

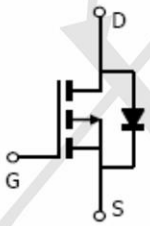
Package and Pin Configuration



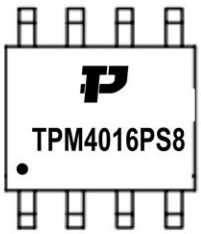
SOP-8 top view



Circuit diagram



Marking



Absolute Maximum Ratings (T_A=25℃unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	-40	V
Gate-Source Voltage	V_{GS}	±20	V
Drain Current-Continuous	I_D	-12	A
Drain Current-Continuous(T_C=100℃)	I_D (100℃)	-9	A
Pulsed Drain Current	I_{DM}	50	A
Maximum Power Dissipation	P_D	2.5	W
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55 To 150	℃

Thermal Characteristic

Thermal Resistance ,Junction-to-Ambient(Note 2)	$R_{\theta JA}$	50	℃/W

Electrical Characteristics (T_A=25℃unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=-250μA	-40	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-40V,V_{GS}=0V	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}=±20V,V_{DS}=0V	-	-	±100	nA
On Characteristics (Note 3)						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=-250μA	-1.0		-2.5	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	V_{GS}=-10V, I_D=-12A	-	12	18	mΩ
Forward Transconductance	g_{FS}	V_{DS}=-15V,I_D=-10A	35	-	-	S
Dynamic Characteristics (Note4)						
Input Capacitance	C_{lss}	V_{DS}=-20V,V_{GS}=0V, F=1.0MHz	-	2800	-	PF
Output Capacitance	C_{oss}		-	320	-	PF
Reverse Transfer Capacitance	C_{rss}		-	220	-	PF
Switching Characteristics (Note 4)						
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=-20V, ,R_L=2Ω V_{GS}=-10V,R_{GEN}=6Ω	-	11	-	nS
Turn-on Rise Time	t_r		-	75	-	nS
Turn-Off Delay Time	$t_{d(off)}$		-	89	-	nS
Turn-Off Fall Time	t_f		-	35	-	nS
Total Gate Charge	Q_g	V_{DS}=-20V,I_D=-12A, V_{GS}=-10V	-	40	-	nC
Gate-Source Charge	Q_{gs}		-	6	-	nC
Gate-Drain Charge	Q_{gd}		-	12	-	nC
Drain-Source Diode Characteristics						
Diode Forward Voltage (Note 3)	V_{SD}	V_{GS}=0V,I_S=-12A	-	-	1.2	V
Diode Forward Current (Note 2)	I_S		-	-	-12	A

Typical Electrical and Thermal Characteristics

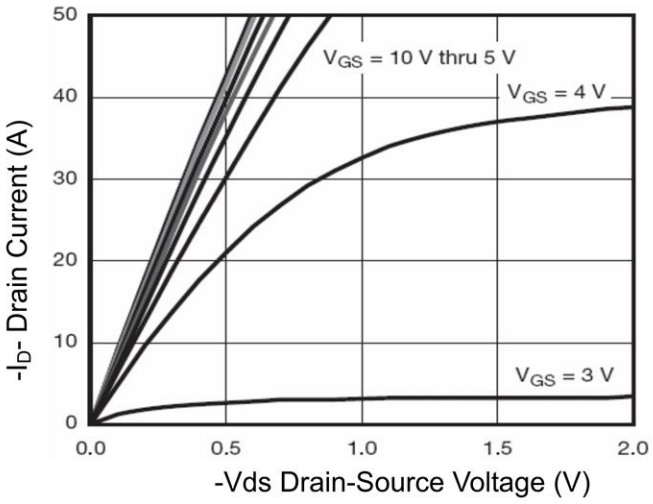


Figure 1 Output Characteristics

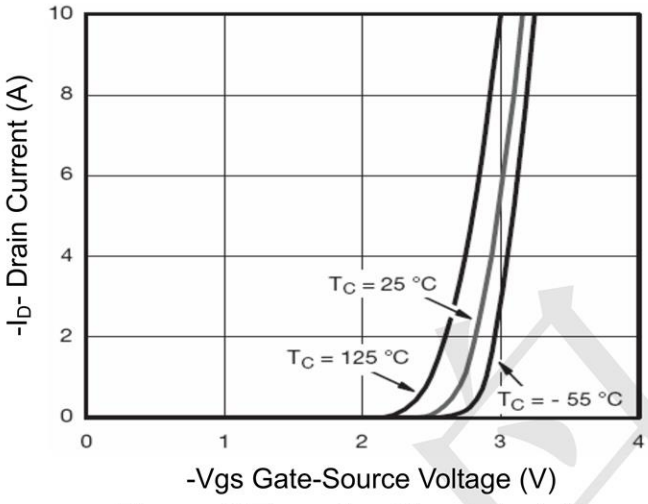


Figure 2 Transfer Characteristics

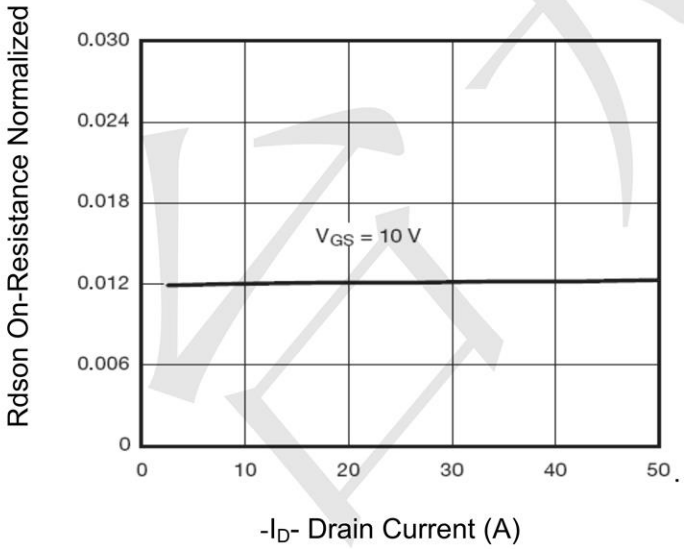


Figure 3 Rdson- Drain Current

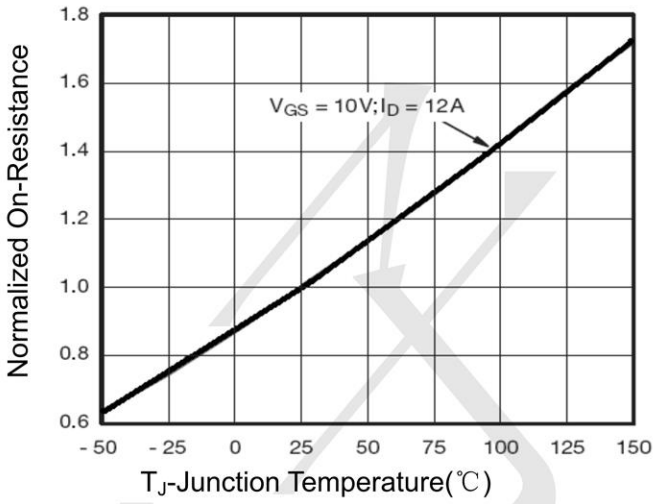


Figure 4 Rdson-Junction Temperature

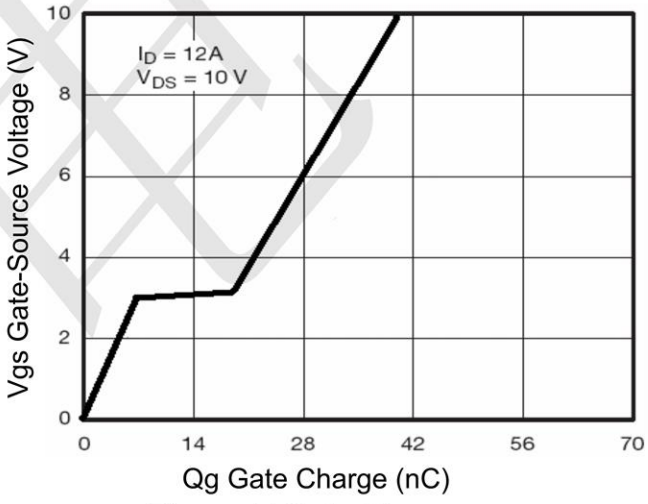


Figure 5 Gate Charge

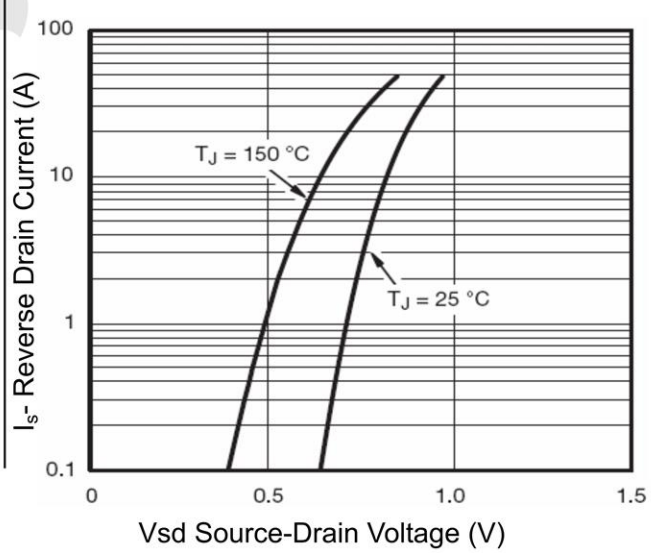


Figure 6 Source- Drain Diode Forward

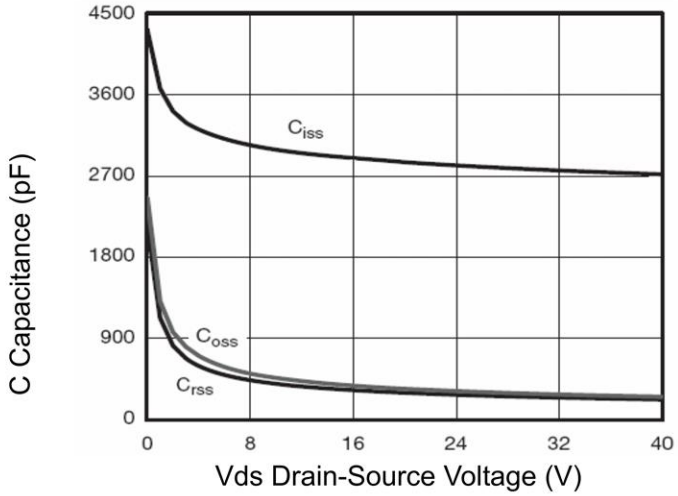


Figure 7 Capacitance vs Vds

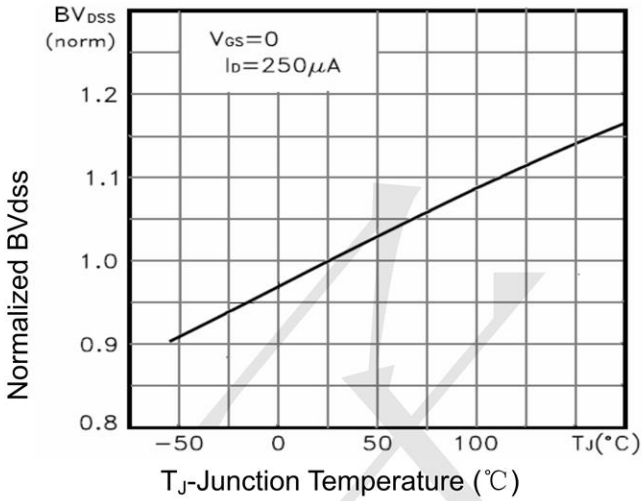


Figure 9 BV_{DSS} vs Junction Temperature

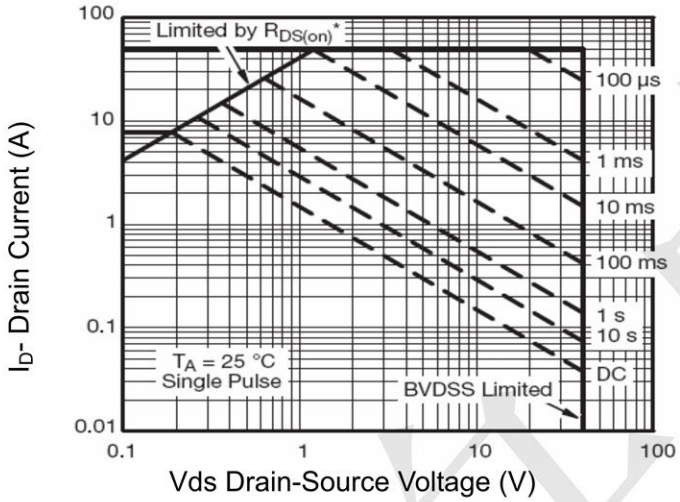


Figure 8 Safe Operation Area

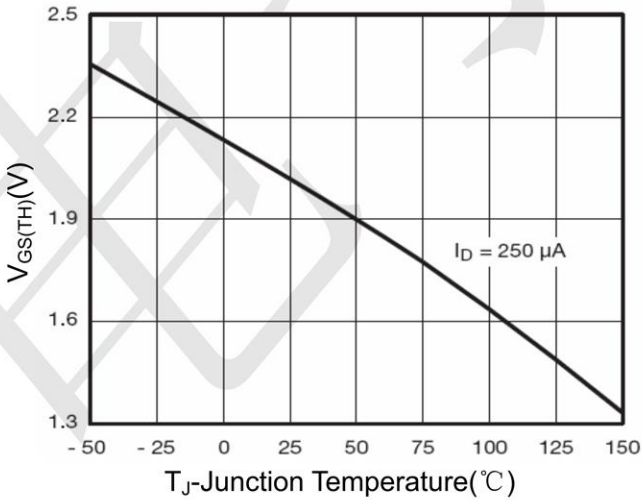


Figure 10 $V_{GS(th)}$ vs Junction Temperature

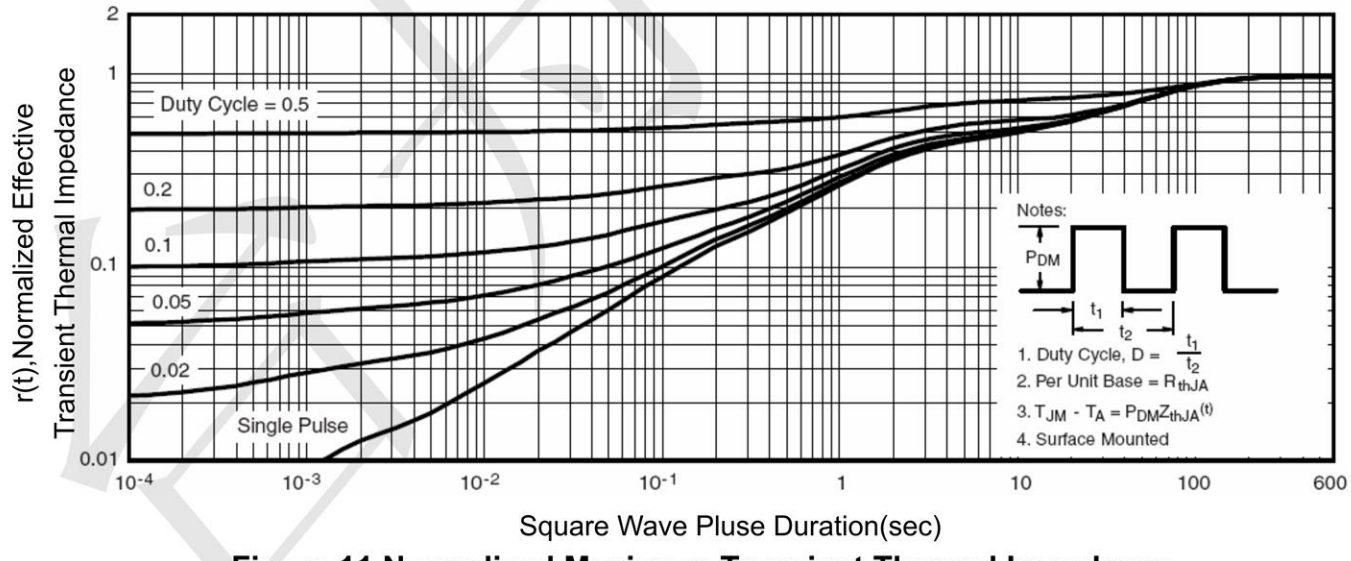
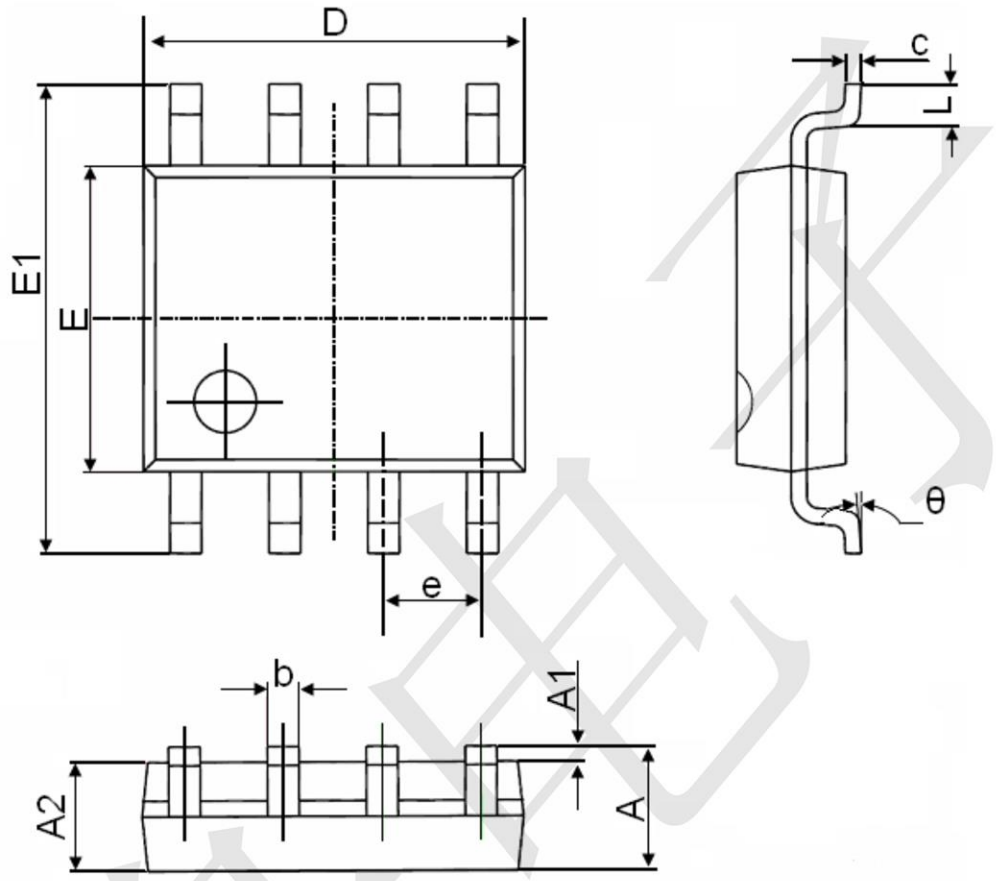


Figure 11 Normalized Maximum Transient Thermal Impedance

SOP-8 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270(BSC)		0.050(BSC)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

Unikeyic Electronics

Global Electronic Components Distributor

Click to view pricing, inventory, delivery, and lifecycle information:

TECH PUBLIC:

TPNUP4202W1T2G BV03CWT TP6841S6-1 TPAX809SS3 TPM3090NK3-5 TPM30V6NS6-2 TPM30V8ND6-1 TP3USB30Q10 TPNTD6416ANLT4G 2SJ360-TP TPESD1221P TPG619C6 TPESD05R4UD TPM20V2PLX6-1 FDMC5614P LM337BD2TR4G-TP SI4936ADY-TP TPS73230DBVR-TP ESD5Z7V0 IRLR3110ZTRPBF-TP PNTK3139PT5G SMFJ24A TPM2013PLS8-1 TPM7002ES3 BSL215C DMPH6050SK3-TP ESD5Z7V0C PESD9R3.3ST5G TPM6028NK3-1 TPMZB670UPE