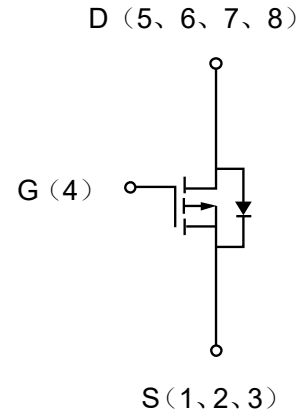


Description

The PPM8P40V8 uses advanced trench technology to provide excellent $R_{DS(on)}$, low gate charge and operation with gate voltage as low as -4.5V. This device is suitable for use as a wide variety of application.

MOSFET Product Summary		
$V_{DS}(V)$	$R_{DS(on)}(m\Omega)$	$I_D(A)$
-40	21@ $V_{GS}=-10V$	-8
	31@ $V_{GS}=-4.5V$	


Absolute Maximum Ratings @25°C

Parameter	Symbol	Value	Unit
Drain-Source Voltage ($V_{GS}=0V$)	V_{DS}	-40	V
Gate-Source Voltage ($V_{DS}=0V$)	V_{GS}	± 20	V
Drain Current-Continuous ($TC=25^\circ C$)	I_D	-8	A
Drain Current-Continuous ($TC=100^\circ C$)		-5	A
Drain Current-Continuous @Current-Pulse (Note1)	$I_{DM(pulse)}$	-32	A
Maximum Power Dissipation ($TC=25^\circ C$)	P_D	3	W
Maximum Power Dissipation ($TC=100^\circ C$)		1.2	W
Operating Junction and storage Temperature Range	T_J, T_{STG}	-55 To 150	$^\circ C$

Thermal Characteristic

Parameter	Symbol	Min.	Typ.	Max.	Units
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$		42		$^\circ C/W$

Electrical characteristics per line@25°C (unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
On/Off States						
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D = -250\mu A, V_{GS} = 0V$	-40			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -40V, V_{GS} = 0V$			-1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1.1	-1.7	-2.5	V
Forward Trans conductance	g_{FS}	$V_{DS} = -5V, I_D = -5A$	15			S
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -8A$		16	21	$m\Omega$
		$V_{GS} = -4.5V, I_D = -6A$		21	31	$m\Omega$

DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	$V_{GS}=0V, V_{DS}=-20V,$ $f=1.0MHz$		2050		pF
Output Capacitance	C_{DSS}			260		pF
Reverse Transfer Capacitance	C_{RSS}			150		pF
SWITCHING TIMES						
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=-20V, V_{GS}=-10V,$ $R_L=1.6\Omega, R_{GEN}=3\Omega$		10		ns
Turn-On Rise Time	t_r			24		ns
Turn-Off Delay Time	$t_{d(off)}$			40		ns
Turn-Off Fall Time	t_f			9		ns
Total Gate Charge	Q_g	$V_{DS}=-20V, V_{GS}=-10V,$ $I_D=-8A$		45		nC
Gate-Source Charge	Q_{gs}			6		nC
Gate-Drain Charge	Q_{gd}			11		nC
Source-Drain Diode Characteristics						
Source-Drain Current (Body Diode)	I_{SD}				-8	A
Forward on Voltage	V_{SD}	$V_{GS}=0V, I_S=-8A$			-1.2	V

Notes:

- 1.Repetitive Rating: Pulse width limited by maximum junction temperature

Typical Characteristics

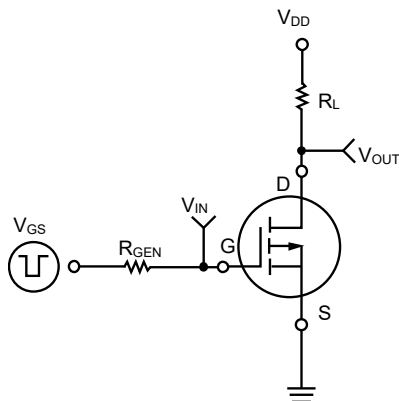


Figure 1. Power Dissipation

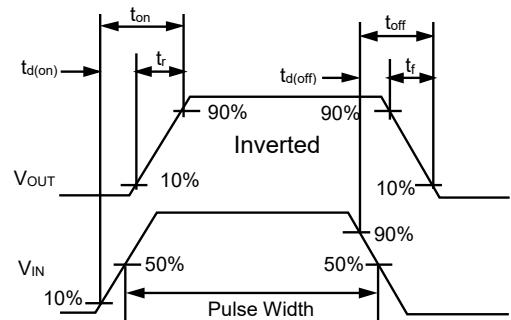


Figure 2. Drain Current

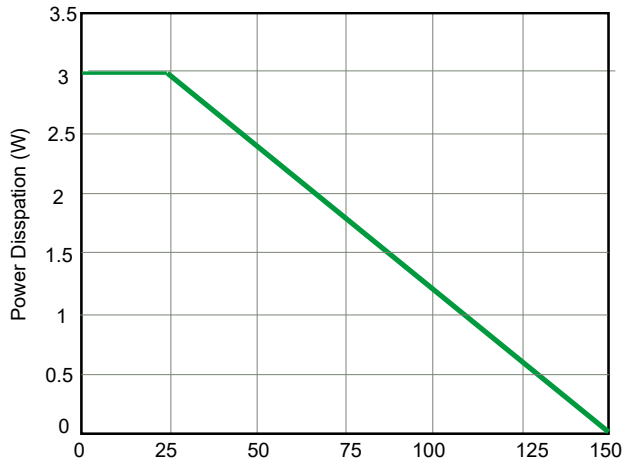


Fig 3. Output Characteristics

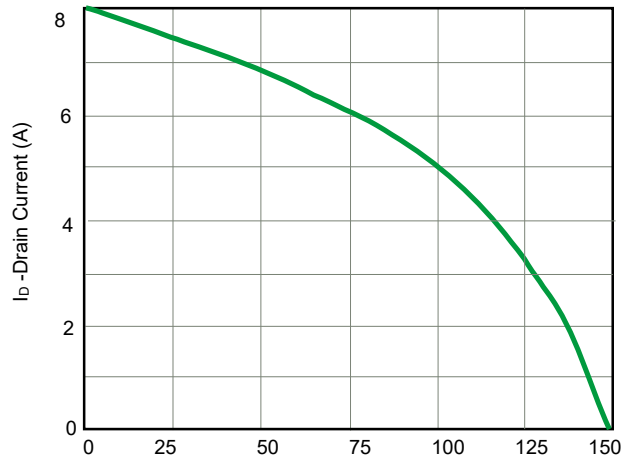


Fig 4. Transfer Characteristics

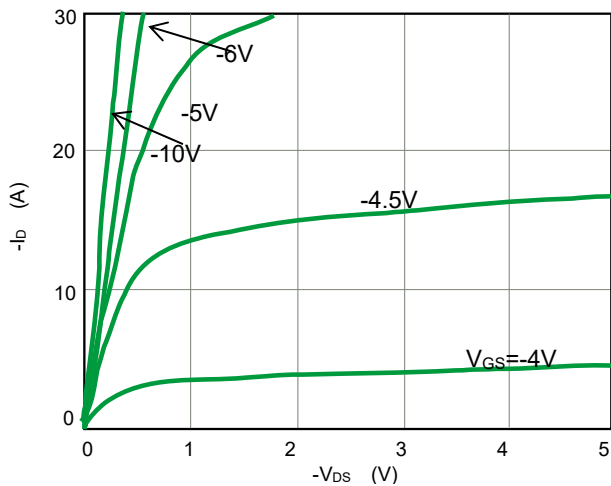


Fig 5. Capacitance

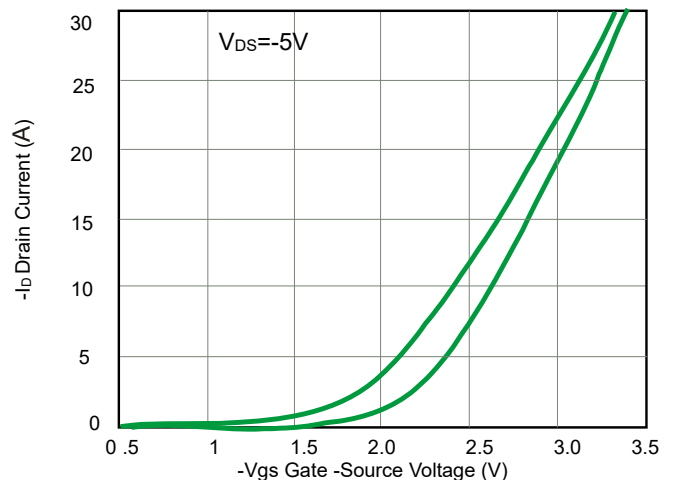


Fig 6. R_{DS(ON)} VS Junction Temperature

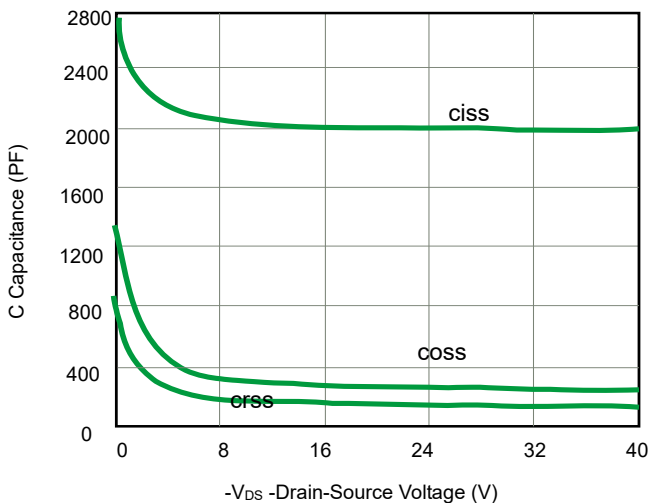


Fig 7. V_{GS} VS Junction Temperature

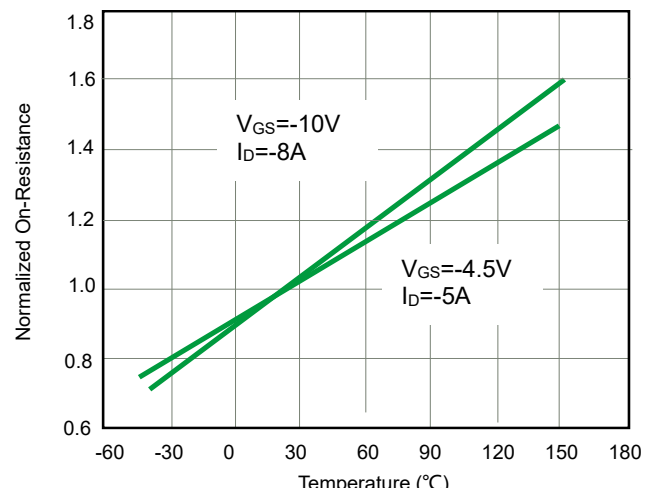


Fig 8. Gate Charge waveforms

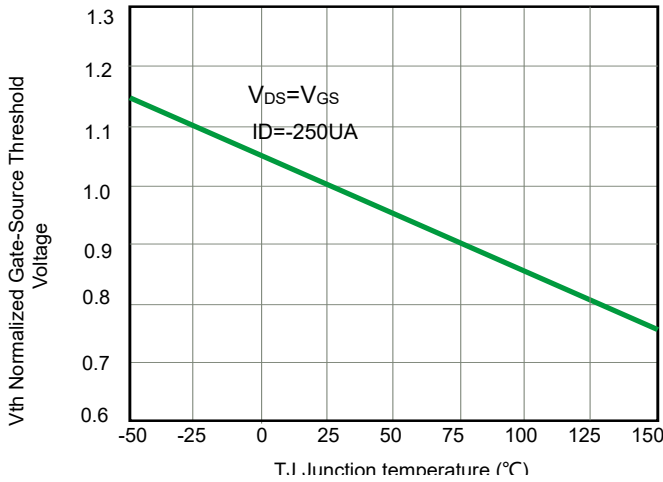


Fig 9. SOA

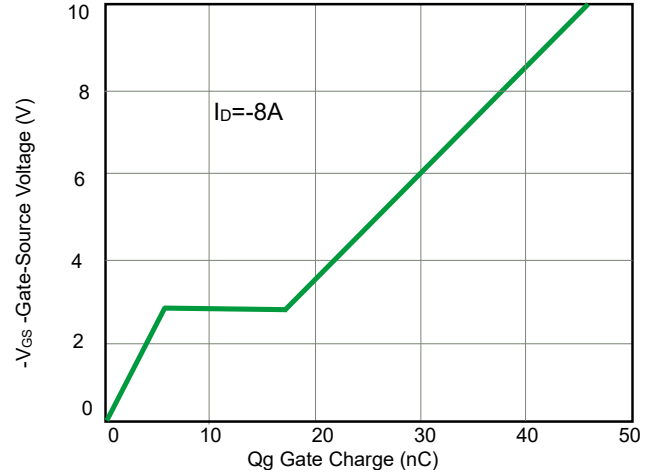


Fig 10. Gate Charge

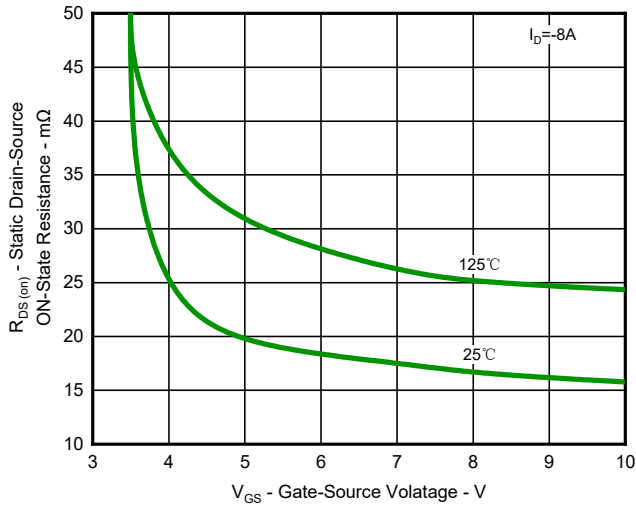


Fig 11. Rds on vs Vgs

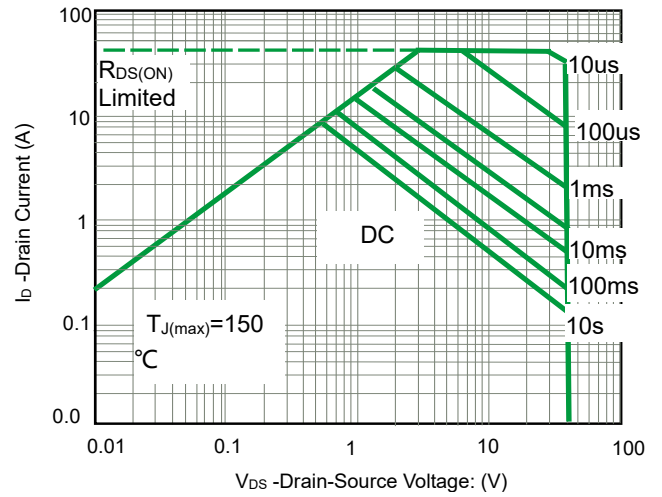


Fig 12. Safe Operation Area

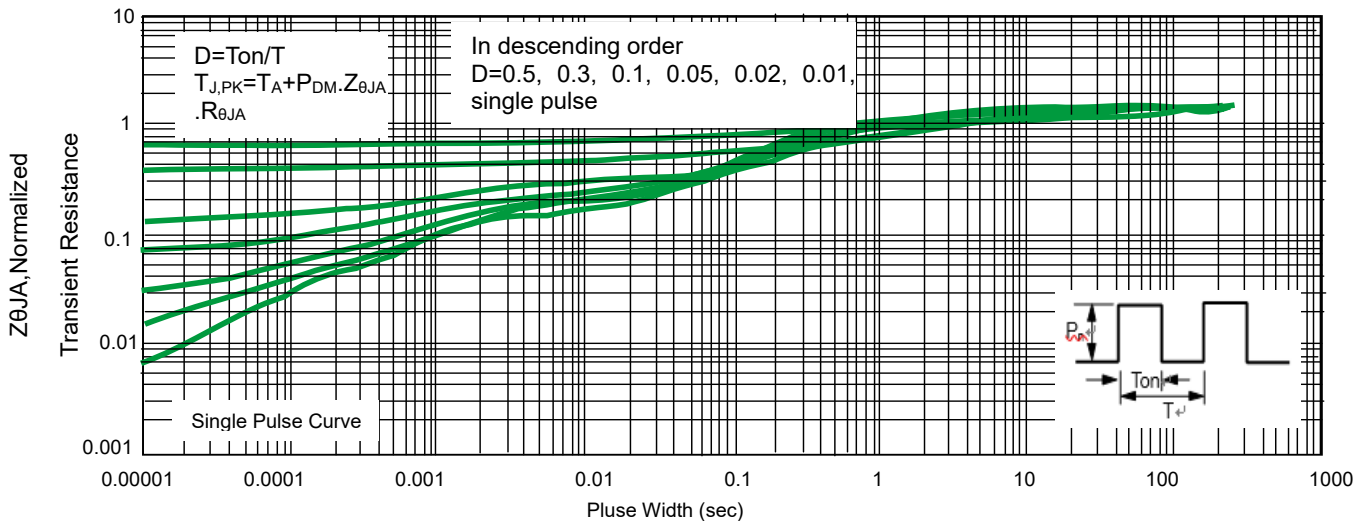
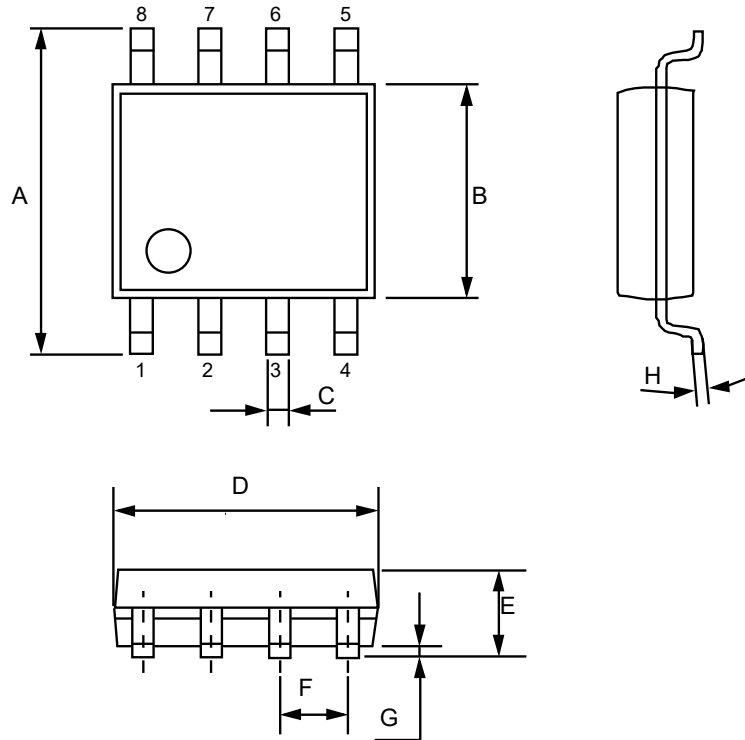


Fig 13. Normalized Maximum Transient Thermal Impedance

Product dimension (SOP-8)

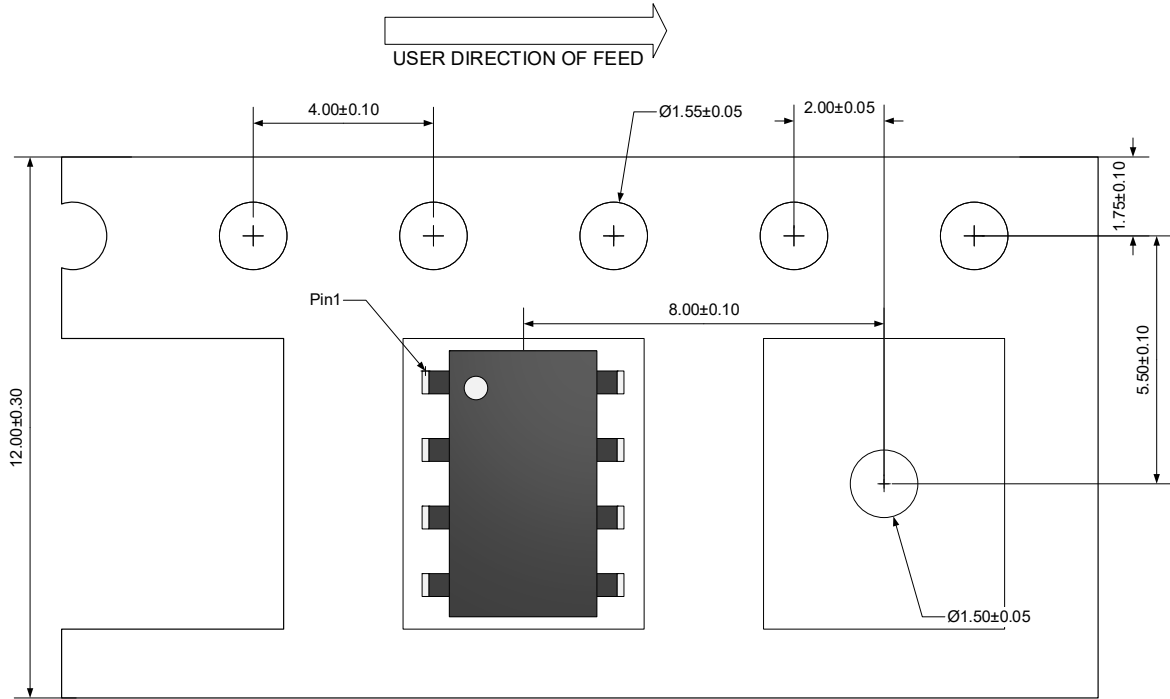


Dim	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	5.800	6.200	0.228	0.244
B	3.800	4.000	0.150	0.157
C	0.330	0.510	0.013	0.020
D	4.700	5.100	0.185	0.200
E	1.350	1.750	0.053	0.069
F	1.270 (BSC)		0.050 (BSC)	
G	0.100	0.250	0.004	0.010
H	0.170	0.250	0.006	0.010

Ordering information


Device	Package	Reel	Shipping
PPM8P40V8	SOP-8	13"	4000 / Tape & Reel

Load with information



Unit:mm


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