

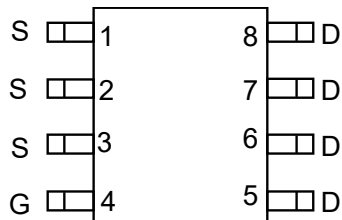
Description

The MOSFET provide the best combination of fast switching, low on-resistance and cost-effectiveness.

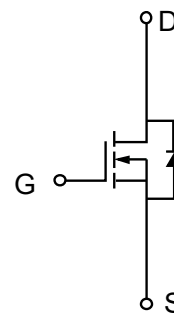
MOSFET Product Summary

$V_{DS}(V)$	$R_{DS(on)}(m\Omega)$	$I_D(A)$
30	3.7@ $V_{GS}=4.5V$	23

Top View (SOP-8)



Internal Structure



Absolute maximum rating@25°C

Parameter		Symbol	Maximum	Units
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current ($T_J=150^{\circ}C$)	$T_A=25^{\circ}C$	I_D	23	A
	$T_A=70^{\circ}C$		18	
Pulsed Drain Current		I_{DM}	80	A
Maximum Power Dissipation	$T_A=25^{\circ}C$	P_D	2.72	W
	$T_A=70^{\circ}C$		1.74	
Operating Junction and Storage Temperature Range		T_J	-55 to 150	°C
Thermal Characteristics				
Parameter	Symbol	Typical	Maximum	Units
Thermal Resistance-Junction to Ambient	$R_{\theta JA}$	46	62.5	°C/W

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D = 250\mu A, V_{GS} = 0V$	30		-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 20V, V_{GS} = 0V$	-	-	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		3	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 15A$	-	2.5	3.2	m Ω
		$V_{GS} = 4.5V, I_D = 10A$	-	3.7	4.9	
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS} = 0V, I_S = 15A$		0.8	1.2	V
Total Gate Charge	Q_g	$V_{GS} = 4.5V, V_{DS} = 15V, I_D = 10A$		43		nC
Total Gate Charge	Q_g	$V_{GS} = 10V, V_{DS} = 15V, I_D = 10A$		84		
Gate-Source Charge	Q_{gs}			14		
Gate-Drain Charge	Q_{gd}			21		
Input Capacitance	C_{ISS}	$V_{GS} = 0V, V_{DS} = 15V, f = 1MHz$	-	3880		pF
Output Capacitance	C_{OSS}		-	690		pF
Reverse Transfer Capacitance	C_{RSS}		-	225		pF
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 15V, V_{GEN} = 10V, R_G = 1\Omega, R_L = 15\Omega, I_D = 1A$	-	27		ns
Turn-Off Delay Time	$t_{d(off)}$		-	85		ns
Turn-On Rise Time	t_r		-	20		ns
Turn-On Fall Time	t_f		-	18		ns
Gate-Resistance	R_g	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$		1.5		Ω

Typical Characteristics

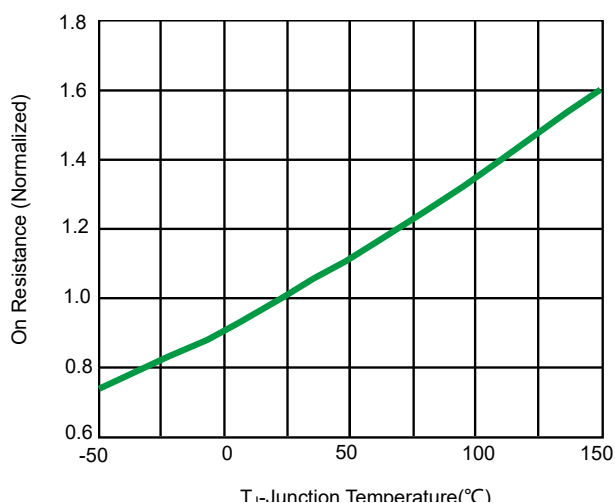


Fig 1. On Resistance vs. Junction Temperature

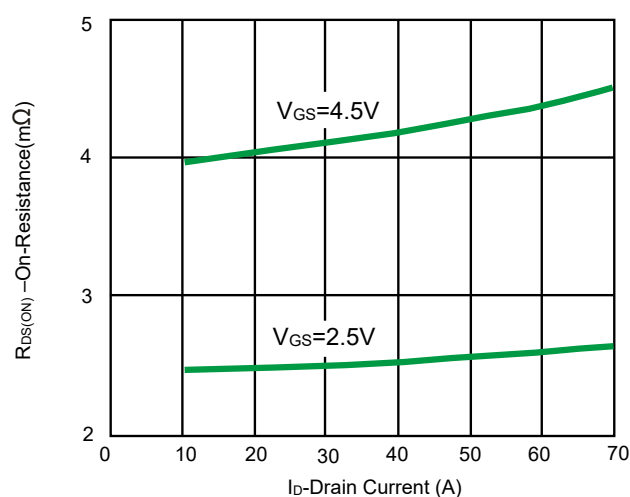


Fig 2. On-Resistance vs. Drain Current

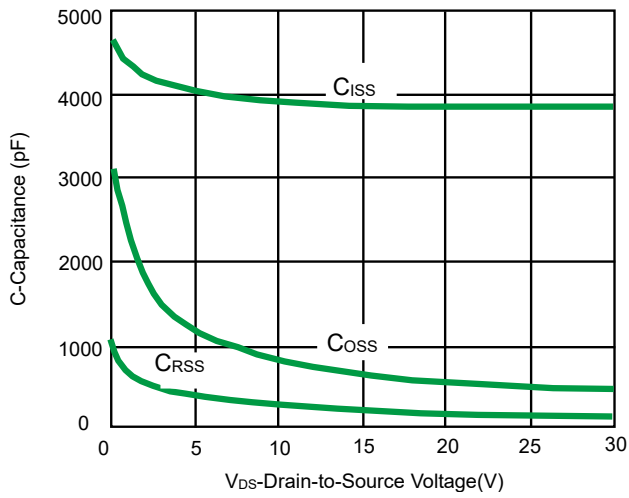


Fig 3. Capacitance

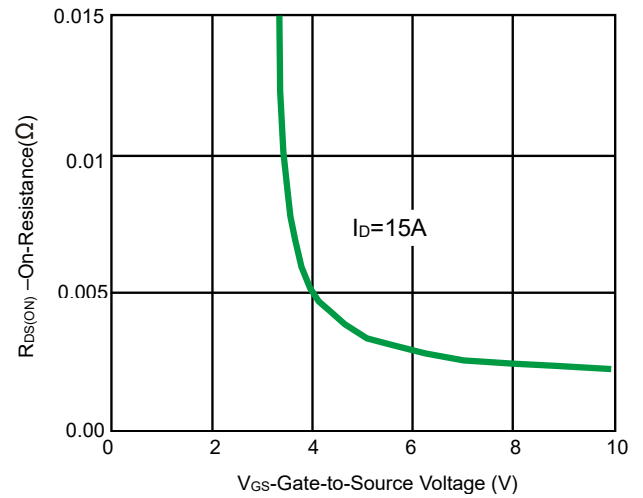


Fig 4. On-Resistance vs. Gate-to-Source Voltage

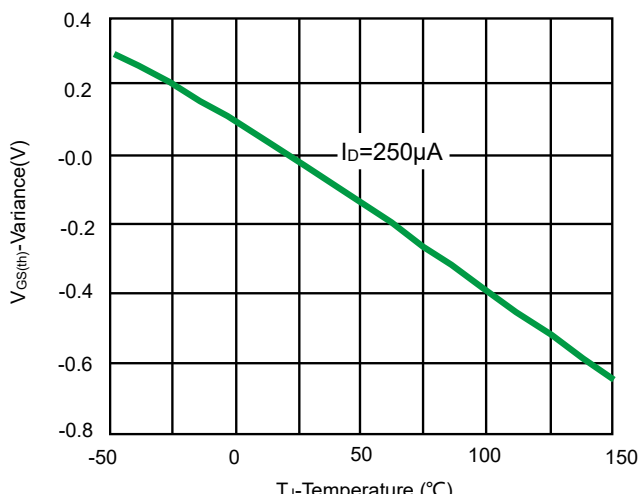


Fig 5. Threshold Voltage

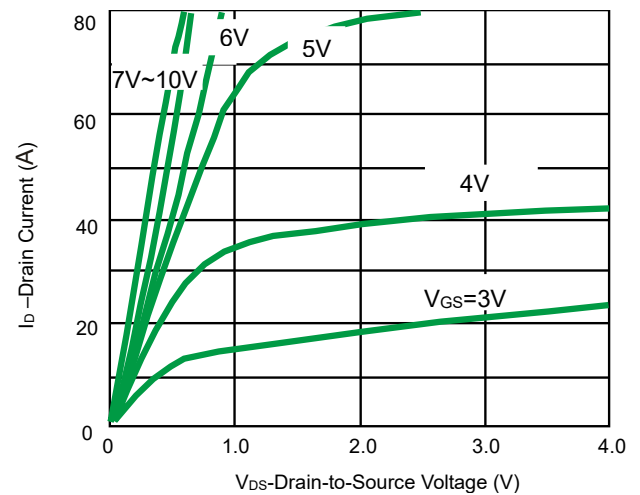


Fig 6. On-Region Characteristics

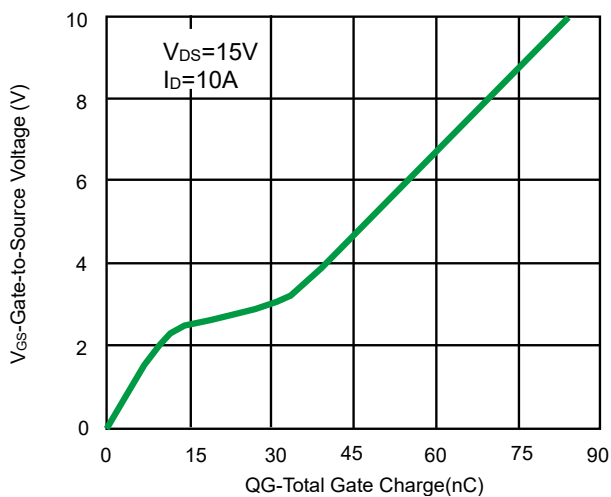


Fig 7. Gate Charge

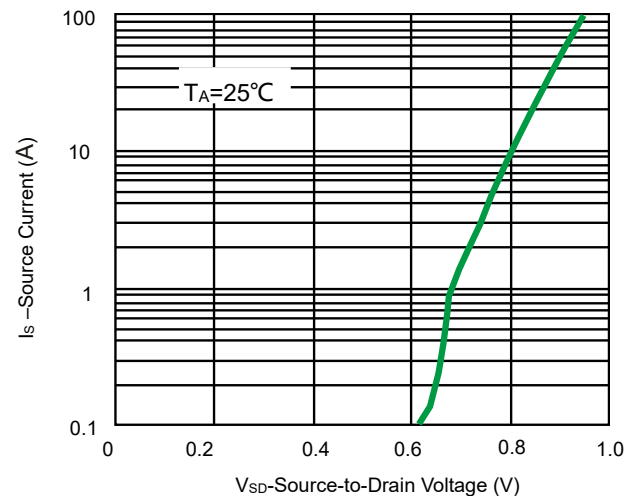


Fig 8. Source to Drain Diode Forward Voltage

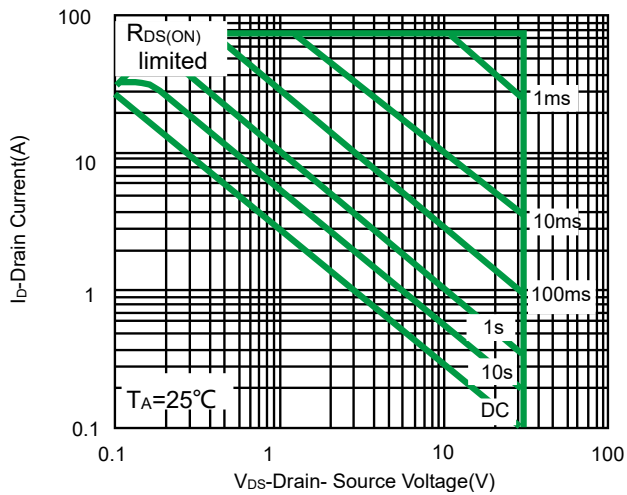


Fig 9. Maximum Forward Biased Safe Operating Area

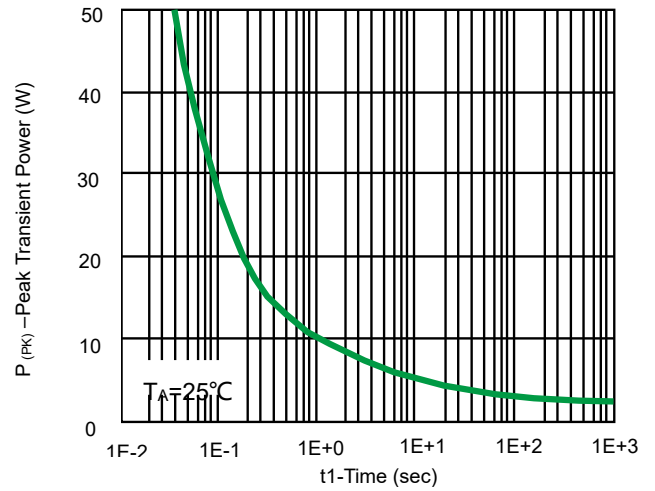


Fig 10. Single Pulse Maximum Power Dissipation

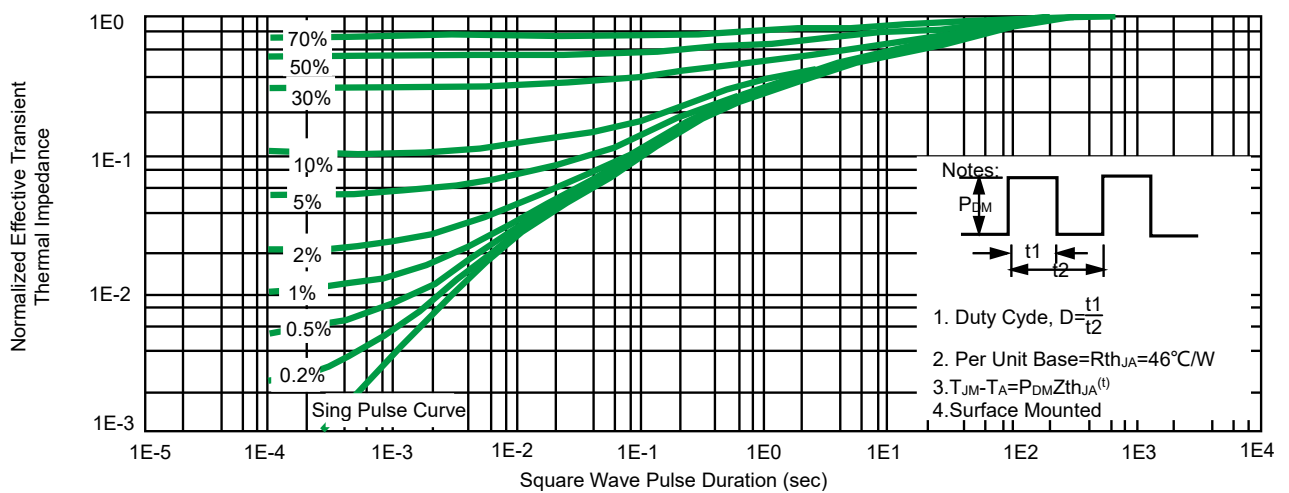
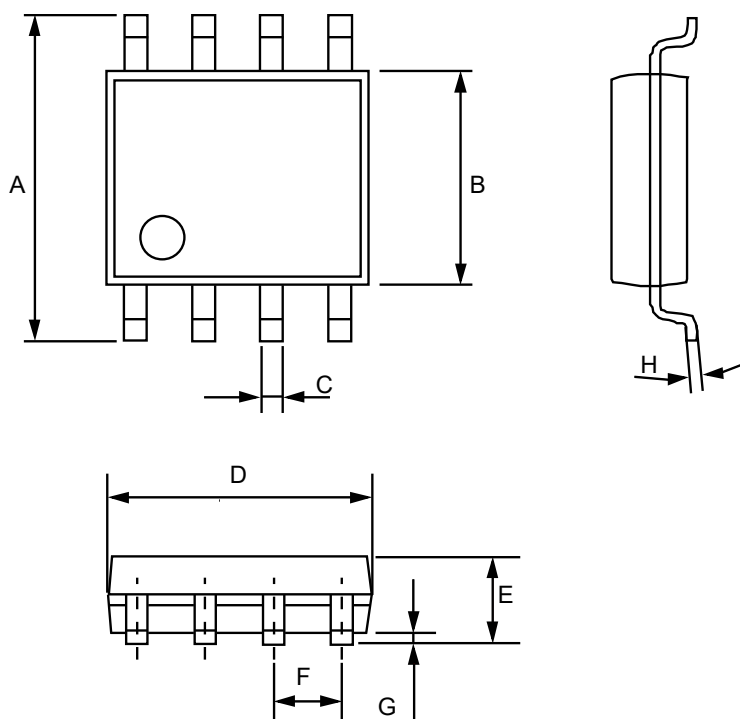


Fig 11. Normalized Thermal Transient Impedance, Junction-to-Ambient

Product dimension (SOP-8)

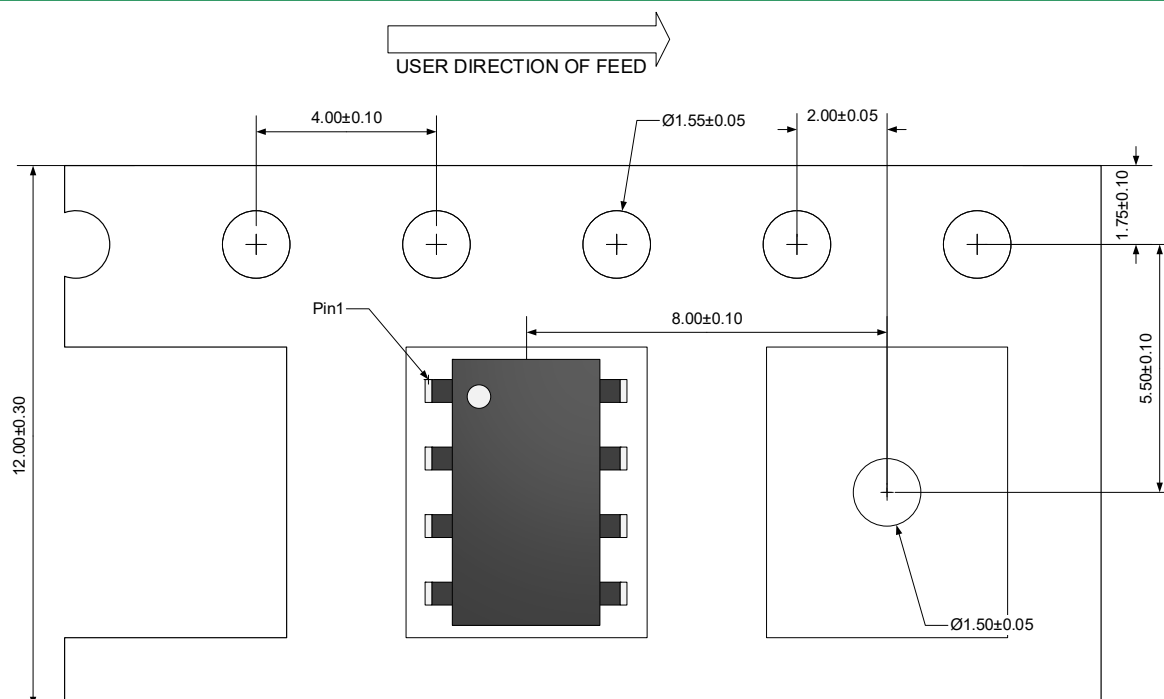


Dim	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	5.800	6.200	0.228	0.244
B	3.800	4.000	0.150	0.157
C	0.330	0.510	0.013	0.020
D	4.700	5.100	0.185	0.200
E	1.350	1.750	0.053	0.069
F	1.270 (BSC)		0.050 (BSC)	
G	0.100	0.250	0.004	0.010
H	0.170	0.250	0.006	0.010

Ordering information

Device	Package	Reel	Shipping
PNM8P30V20	SOP-8	13"	4000 / Tape & Reel

Load with information



Unit:mm

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