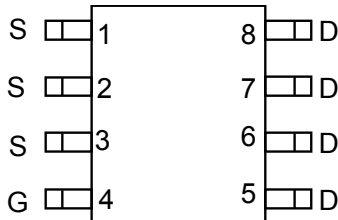


**Description**

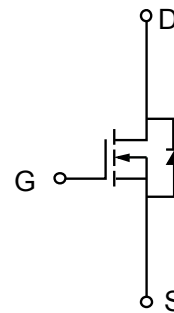
The MOSFET provide the best combination of fast switching, low on-resistance and cost-effectiveness.

MOSFET Product Summary		
V <sub>DS</sub> (V)	R <sub>DS(on)</sub> (mΩ)	I <sub>D</sub> (A)
30	3.7@ VGS=4.5V	23

Top View (SOP-8)



Internal Structure



**Absolute maximum rating@25°C**

Parameter	Symbol	Maximum	Units	
Drain-Source Voltage	V <sub>DS</sub>	30	V	
Gate-Source Voltage	V <sub>GS</sub>	±20	V	
Continuous Drain Current (T <sub>J</sub> =150°C)	I <sub>D</sub>	T <sub>A</sub> =25°C 23	A	
		T <sub>A</sub> =70°C 18		
Pulsed Drain Current	I <sub>DM</sub>	80	A	
Maximum Power Dissipation	P <sub>D</sub>	T <sub>A</sub> =25°C 2.72	W	
		T <sub>A</sub> =70°C 1.74		
Operating Junction and Storage Temperature Range	T <sub>J</sub>	-55 to 150	°C	
<b>Thermal Characteristics</b>				
Parameter	Symbol	Typical	Maximum	Units
Thermal Resistance-Junction to Ambient	R <sub>θJA</sub>	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	$\mu A$
Gate-Body Leakage Current	$I_{GSS}$	$V_{DS} = 0V, V_{GS} = \pm 20V$	-	-	$\pm 100$	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 $\Omega$
		$V_{GS} = 4.5V, I_D = 10A$	-	3.7	4.9	
Drain-Source Diode Forward Voltage	$V_{SD}$	$V_{GS} = 0V, I_S = 15A$		0.8		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		$\Omega$

## Typical Characteristics

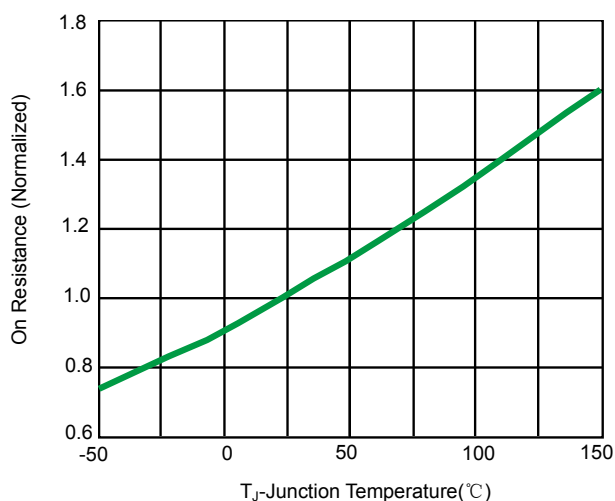


Fig 1. On Resistance vs. Junction Temperature

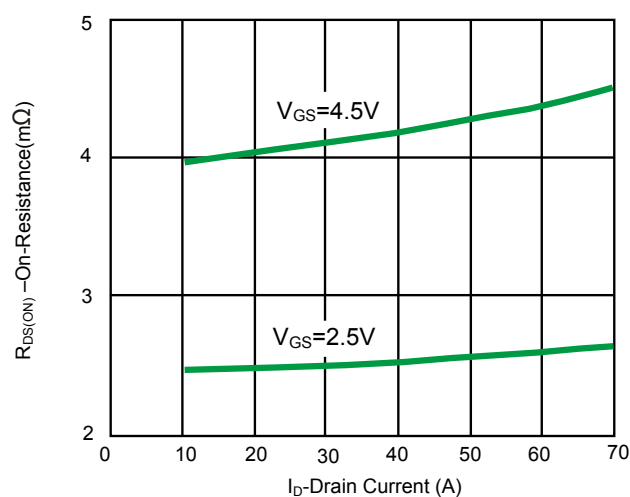


Fig 2. On-Resistance vs. Drain Current

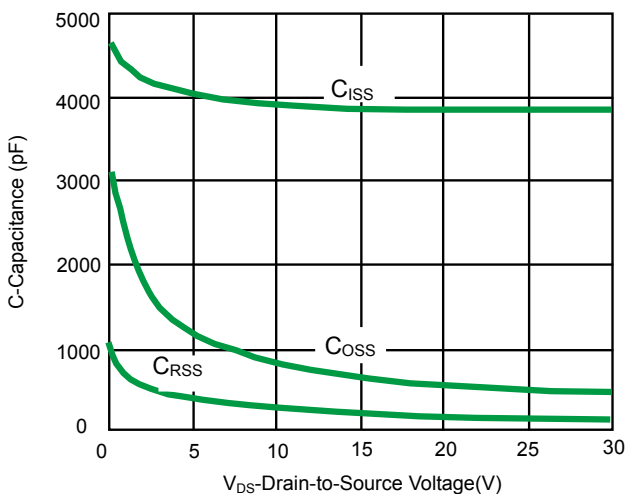


Fig 3. Capacitance

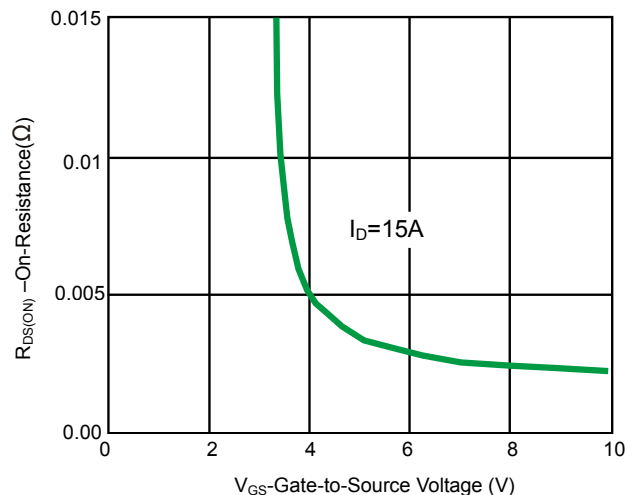


Fig 4. On-Resistance vs. Gate-to-Source Voltage

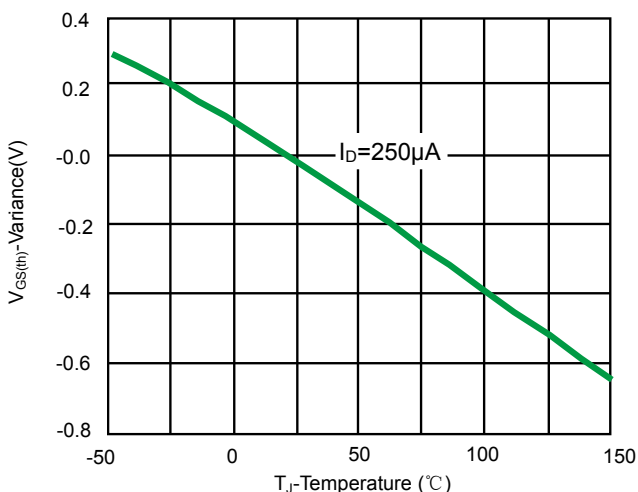


Fig 5. Threshold Voltage

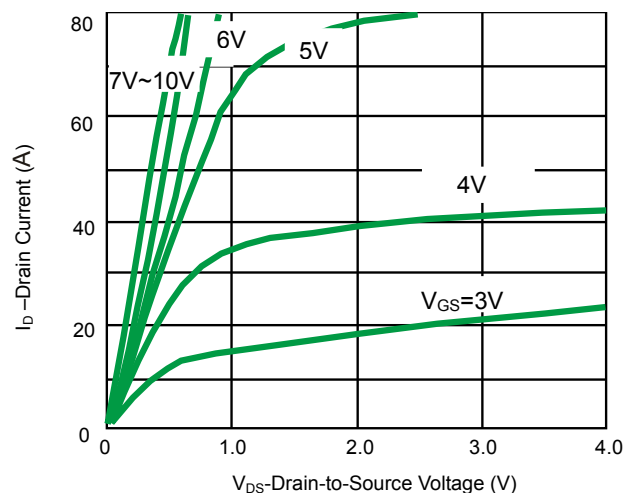


Fig 6. On-Region Characteristics

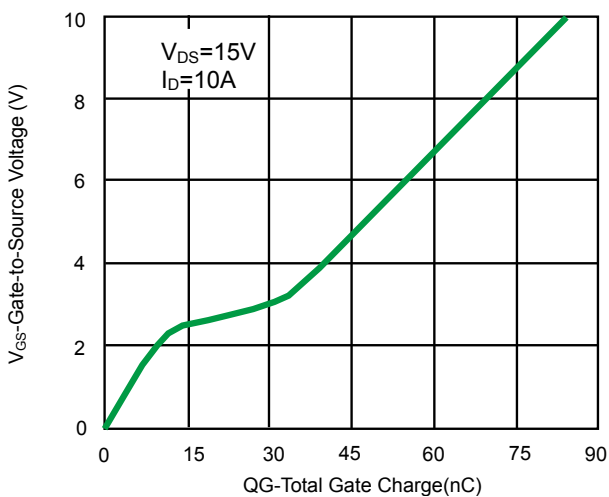


Fig 7. Gate Charge

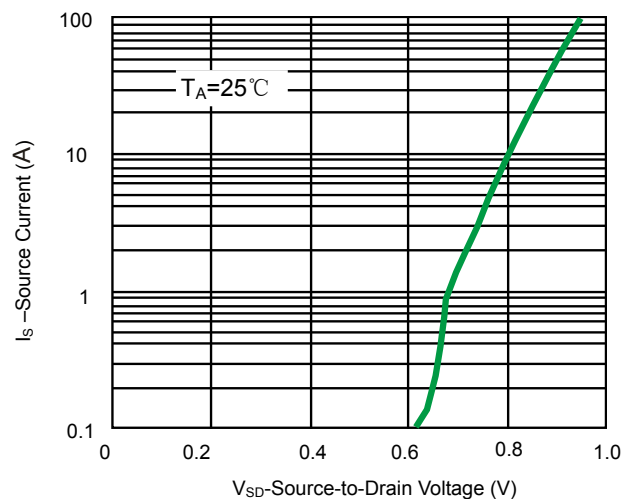


Fig 8. Source to Drain Diode Forward Voltage

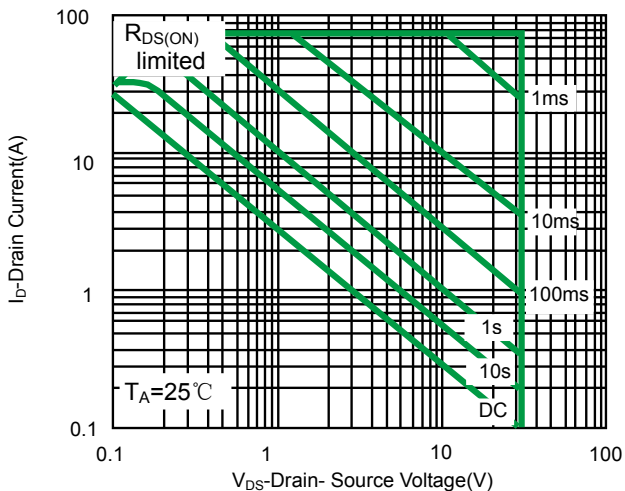


Fig 9. Maximum Forward Biased Safe Operating Area

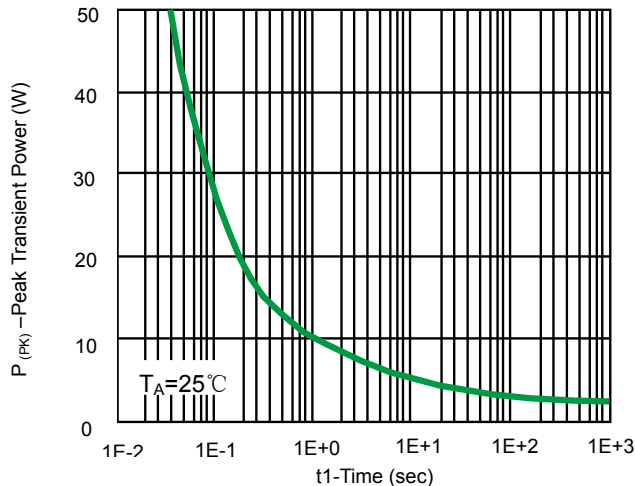


Fig 10. Single Pulse Maximum Power Dissipation

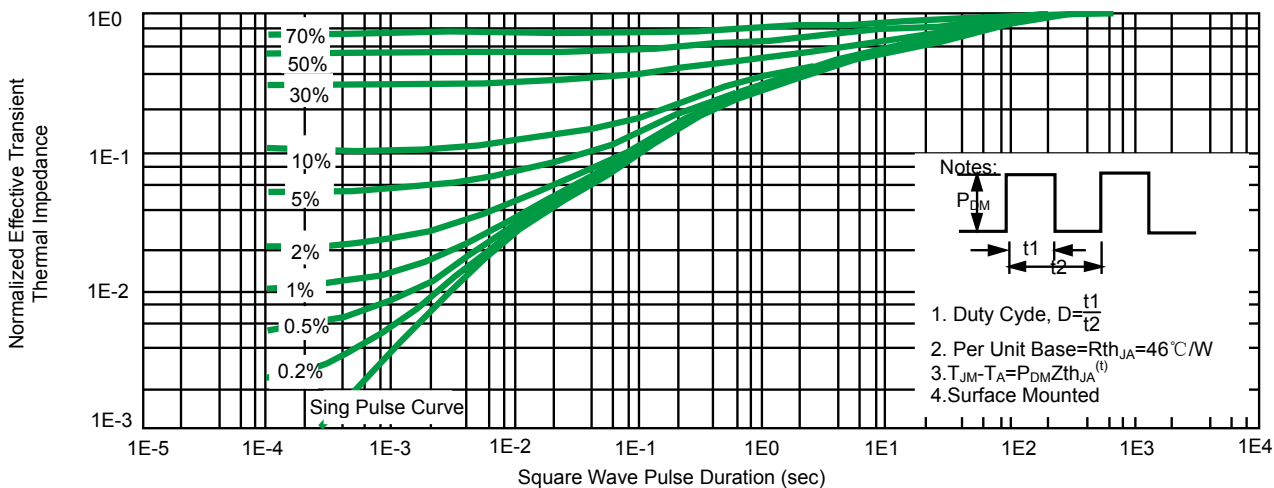
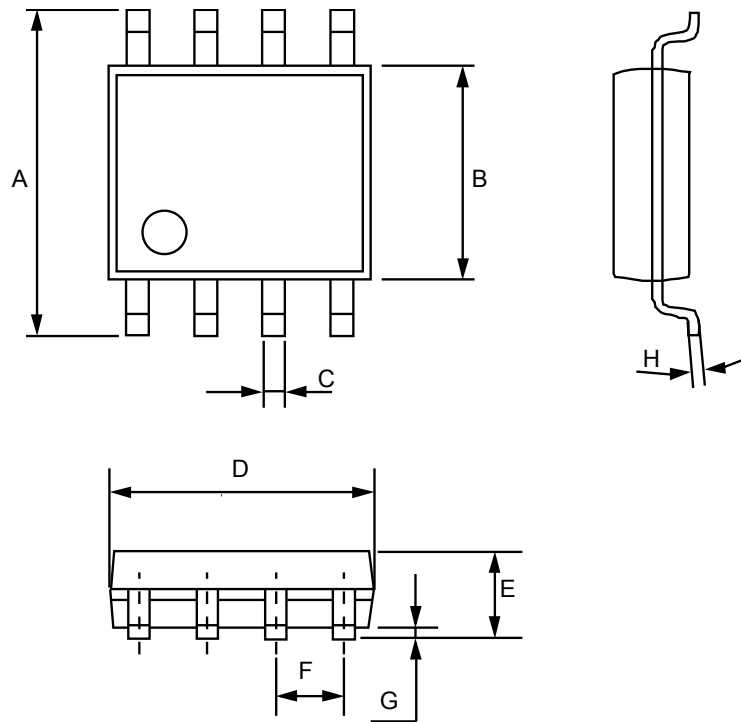



Fig 11. Normalized Thermal Transient Impedance, Junction-to-Ambient

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


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