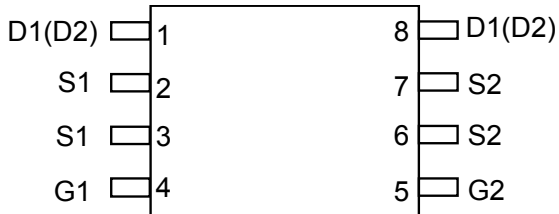


Description

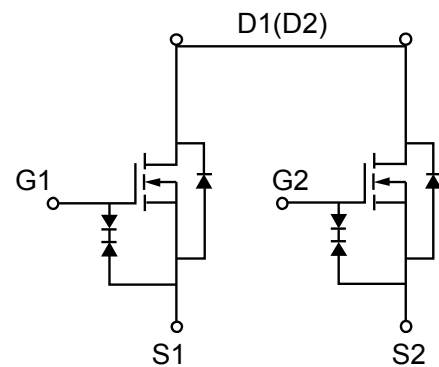
The MOSFET provide the best combination of fast switching, low on-resistance and cost-effectiveness.

MOSFET Product Summary		
V _{DS} (V)	R _{DS(on)} (mΩ)	I _D (A)
20	19@ VGS=4.5V	6

Top View(TSSOP-8)



Internal Structure



Absolute maximum rating@25°C

Parameter		Symbol	Maximum	Units	
Drain-Source Voltage		V _{DS}	20	V	
Gate-Source Voltage		V _{GS}	±12	V	
Continuous Drain Current(T _J =150°C)	T _A =25°C	I _D	6	A	
	T _A =70°C		5.5		
Pulsed Drain Current		I _{DM}	25	A	
Maximum Power Dissipation	T _A =25°C	P _D	1.5	W	
	T _A =70°C		0.96		
Operating Junction and Storage Temperature Range		T _J	-55 to 150	°C	
Thermal Characteristics					
Parameter		Symbol	Typical	Maximum	Units
Maximum Junction-to-Ambient	t≤10s	R _{θJA}	64	83	°C/W
	Steady-State		89	120	
Maximum Junction-to-Lead	Steady-State	R _{θJL}	53	70	°C/W

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=250\mu A, V_{GS}=0V$	20		-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=20V, V_{GS}=0V$	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 12V$	-	-	± 10	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.6	0.8	1.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=4.5V, I_D=6.0A$	-	19	24	m Ω
		$V_{GS}=2.5V, I_D=5.5A$	-	25	30	
		$V_{GS}=1.8V, I_D=2A$		35	50	
Total Gate Charge	Q_g	$V_{GS}=10V, V_{DS}=10V, I_D=6A$		18	22	nC
Total Gate Charge	Q_g	$V_{GS}=4.5V, V_{DS}=10V, I_D=6A$		10	12	
Gate-Source Charge	Q_{gs}			2.2		
Gate-Drain Charge	Q_{gd}			3.6		
Input Capacitance	C_{ISS}	$V_{GS}=0V, V_{DS}=15V, f=1MHz$	-	245	300	pF
Output Capacitance	C_{OSS}		-	90		pF
Reverse Transfer Capacitance	C_{RSS}		-	26		pF
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=10V, V_{GEN}=4.5V, R_G=6\Omega, R_L=10\Omega, I_D=1A$	-	140	200	ns
Turn-Off Delay Time	$t_{d(off)}$		-	390	450	ns
Turn-On Rise Time	t_r		-	210	250	ns
Turn-On Fall Time	t_f		-	220	260	ns
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=1.5A$		0.73	1.2	V

Typical Characteristics

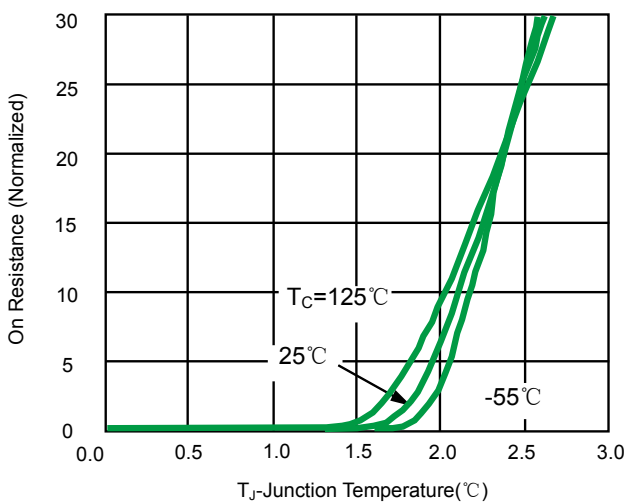


Fig 1. On Resistance vs. Junction Temperature

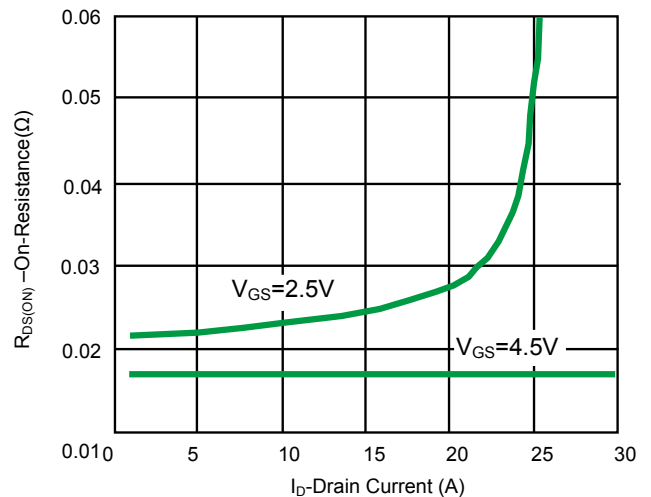


Fig 2. On-Resistance vs. Drain Current

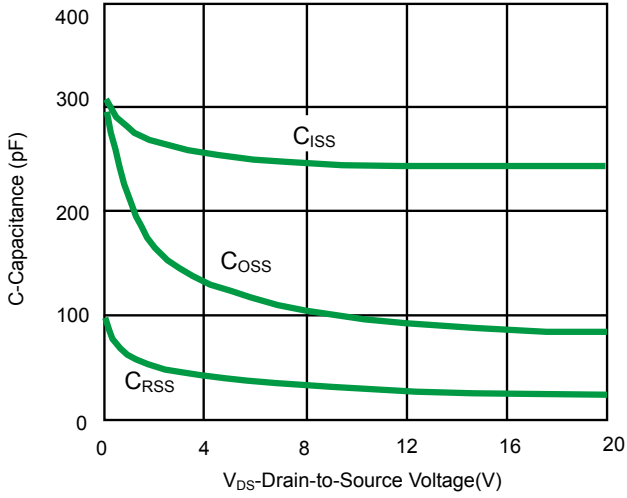


Fig 3. Capacitance

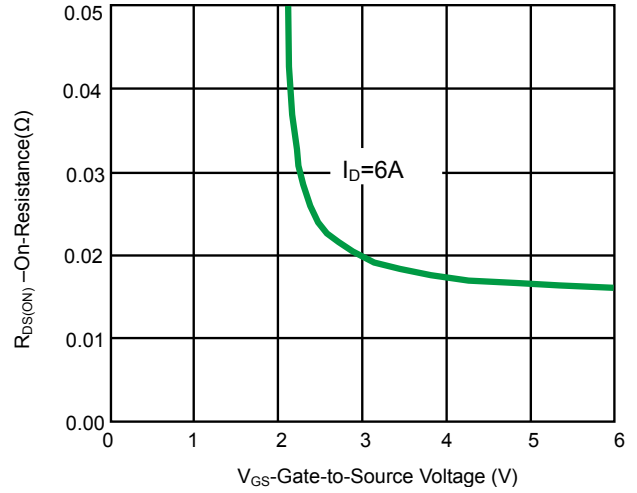


Fig 4. On-Resistance vs. Gate-to-Source Voltage

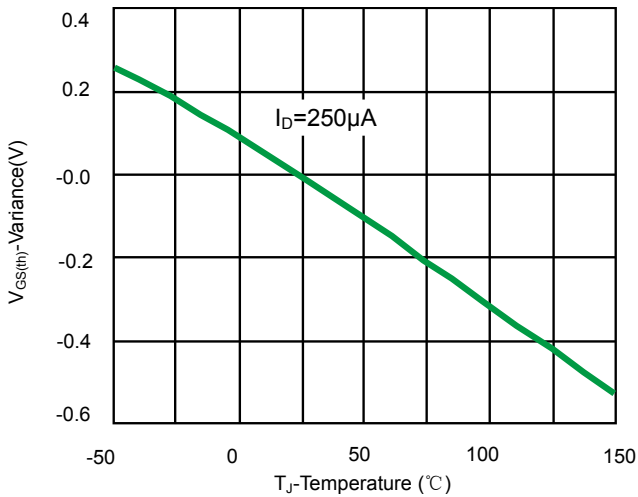


Fig 5. Threshold Voltage

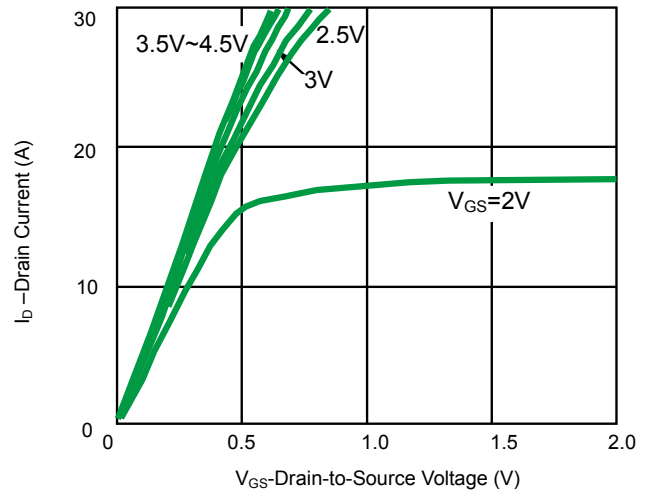


Fig 6. On-Region Characteristics

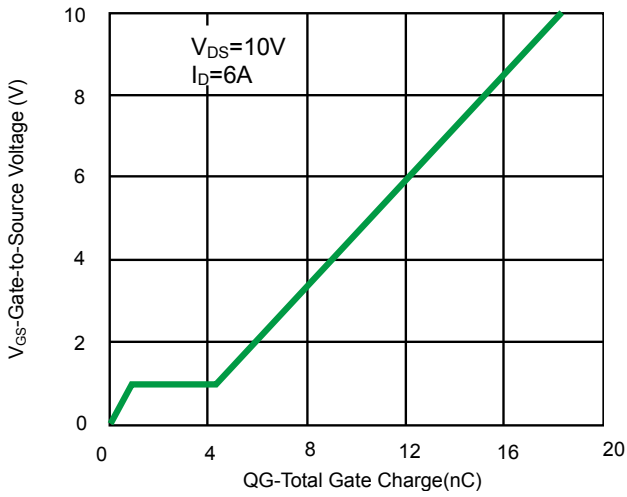


Fig 7. Gate Charge

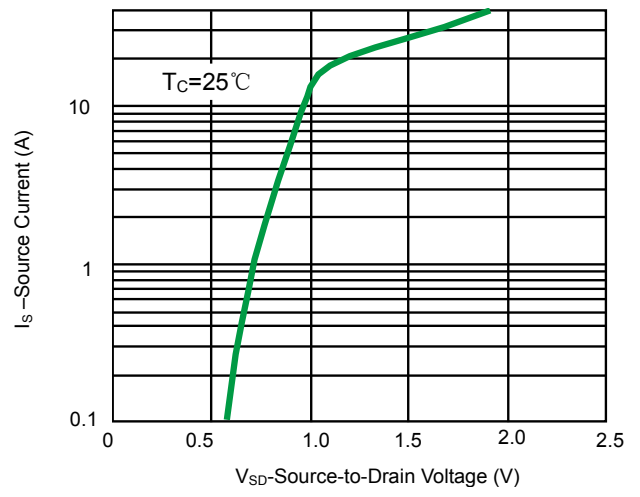


Fig 8. On-Resistance vs. Drain Current

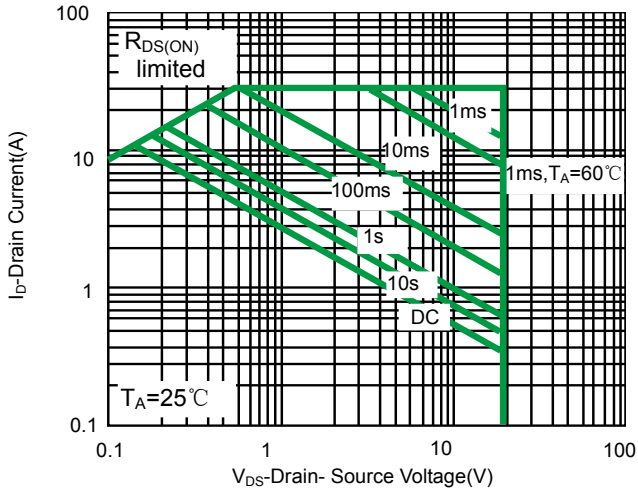


Fig 9. Maximum Forward Biased Safe Operating Area

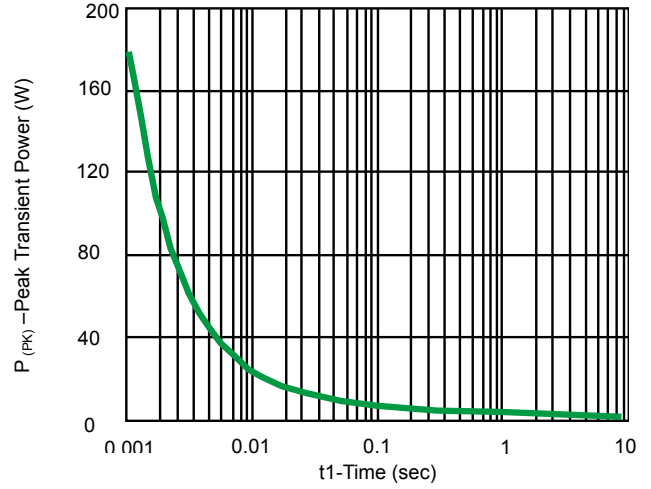


Fig 10. Single Pulse Maximum Power Dissipation

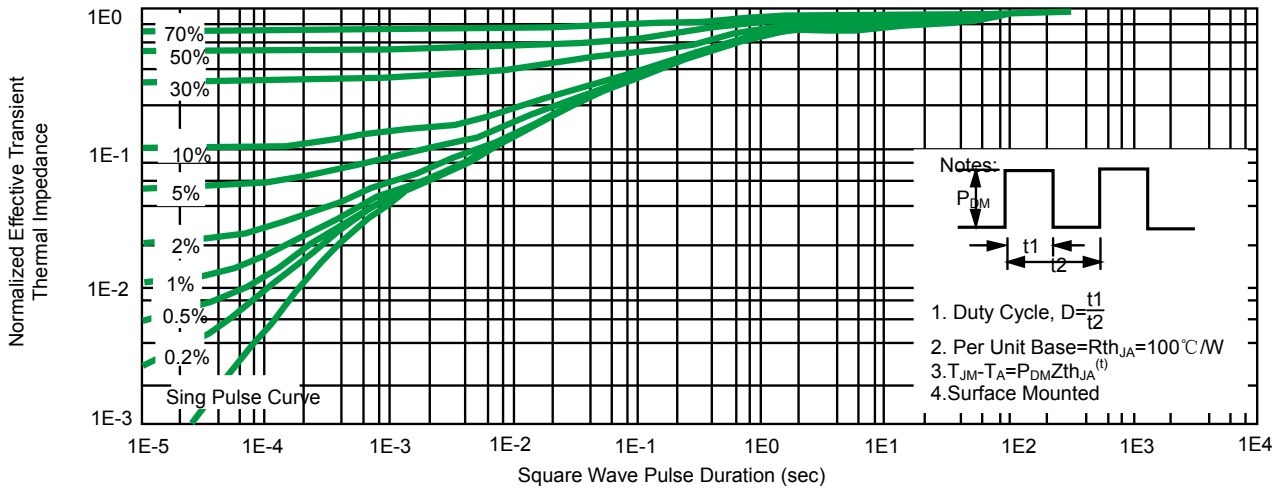
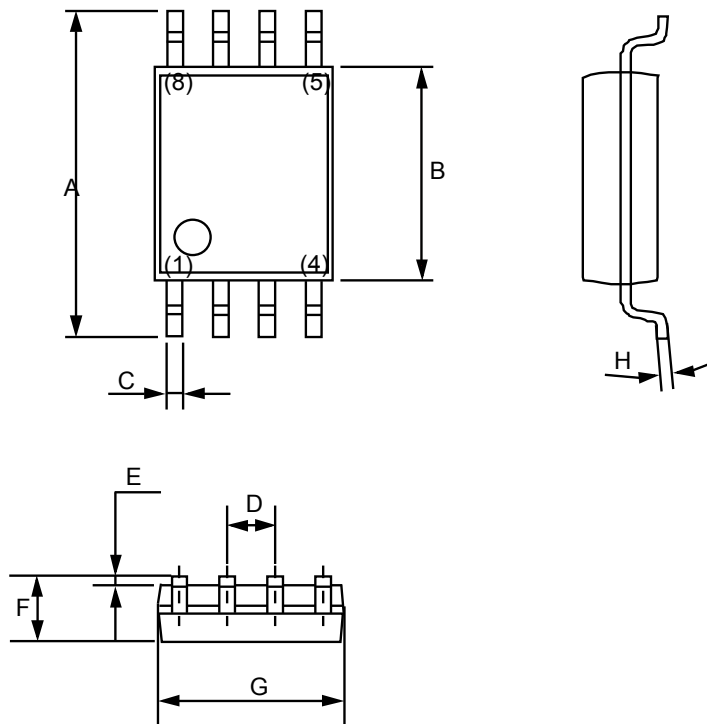



Fig 11. Normalized Thermal Transient Impedance, Junction-to-Ambient

Product dimension(TSSOP-8)



Dim	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	6.250	6.550	0.246	0.258
B	4.300	4.500	0.169	0.177
C	0.190	0.300	0.007	0.012
D	0.65(BSC)		0.026(BSC)	
E	0.020	0.150	0.001	0.006
F	0.800	1.000	0.031	0.039
G	2.900	3.100	0.114	0.122
H	0.090	0.200	0.004	0.008


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