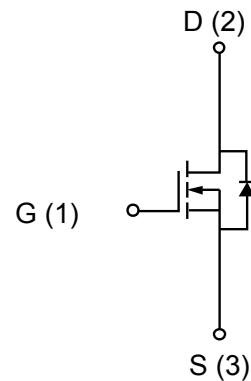


Description

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

MOSFET Product Summary		
$V_{DS}(V)$	$R_{DS(on)}(m\Omega)$	$I_D(A)$
100	105@ $V_{GS}=10V$	9.6


Absolute maximum rating@25°C

Parameter	Symbol	Maximum	Units
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current- Continuous($T_J=150^\circ C$)*	I_D	$T_A=25^\circ C$	9.6
		$T_A=100^\circ C$	6.5
Drain Current-Pulsed	I_{DM}	58	A
Maximum Power Dissipation	P_D	30	W
Derating factor		0.24	W/°C
Single pulse avalanche energy (Note 1)	E_{AS}	150	mJ
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	°C
Thermal Resistance, Junction-to-Case (Note 2)	$R_{\theta JC}$	4.17	°C/W

Notes:

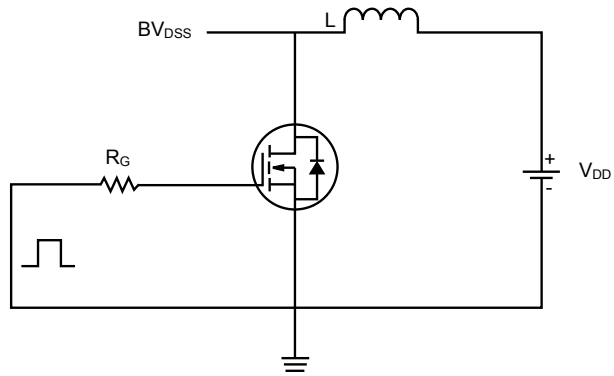
1. EAS condition: $T_J=25^\circ C, V_{DD}=50V, V_G=10V, L=0.5mH, R_g=25\Omega$
2. Surface Mounted on FR4 Board, $t \leq 10$ sec.

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

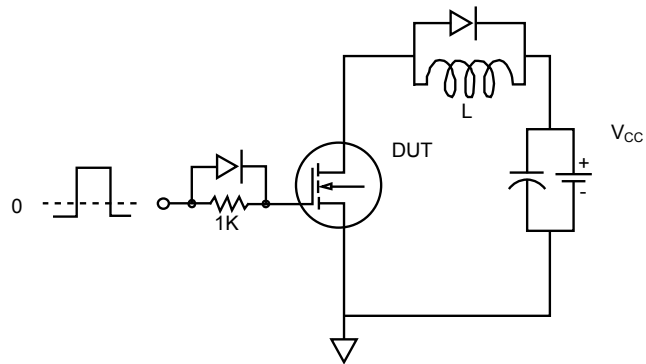
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Off Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=250\mu A, V_{GS}=0V$	100	110	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=100V, V_{GS}=0V$	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.2	1.8	2.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=5A$	-	105	140	m Ω
Forward Transconductance	g_{FS}	$V_{DS}=25V, I_D=6V$	3.5			S
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V,$ $f=1.0MHz$		690		pF
Output Capacitance	C_{oss}			120		
Reverse Transfer Capacitance	C_{rss}			90		
Total Gate Charge	Q_g	$V_{GS}=10V, V_{DS}=30V,$ $I_D=3A$		15.5		nC
Gate-Source Charge	Q_{gs}			3.2		
Gate-Drain Charge	Q_{gd}			4.7		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=30V, V_{GS}=10V,$ $R_G=2.5\Omega, R_L=15\Omega,$ $I_D=2A$	-	11		ns
Turn-Off Delay Time	$t_{d(off)}$		-	35		
Turn-On Rise Time	t_r		-	7.4		
Turn-On Fall Time	t_f		-	9.1		
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=9A$			1.2	V
Diode Forward Current	I_S				9.6	A
Reverse Recovery Time	T_{rr}	$T_J=25^\circ C, I_F=6A$ $di/dt=100A/\mu s$		21		nS
Reverse Recovery Charge	Q_{rr}			97		nC
Forward Turn-On Time	t_{on}	Intrinsic turn-on time is negligible (turn-on is dominated by LS+LD)				

Test Circuit

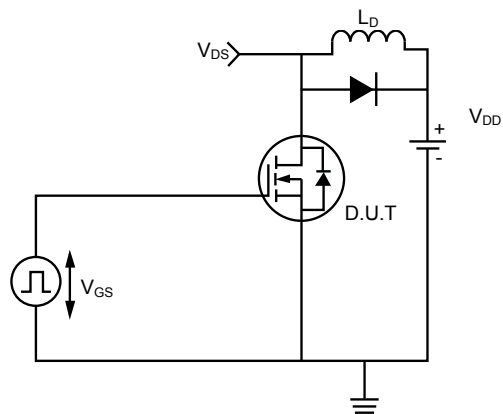
1) E_{AS} Test Circuit



2) Gate Charge test Circuit



3) Switch Time Test Circuit



Typical Characteristics

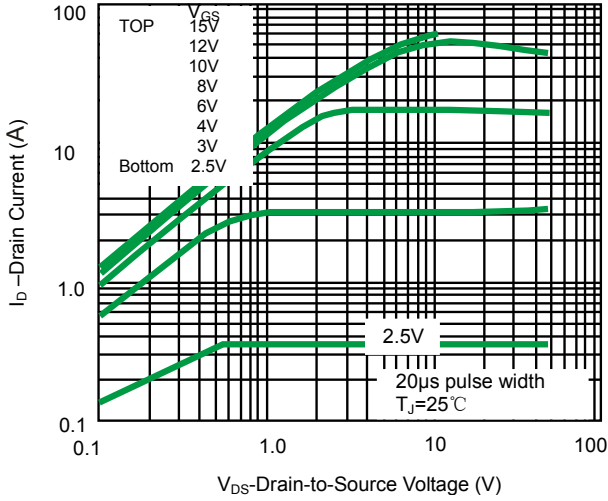


Fig 1. Output Characteristics

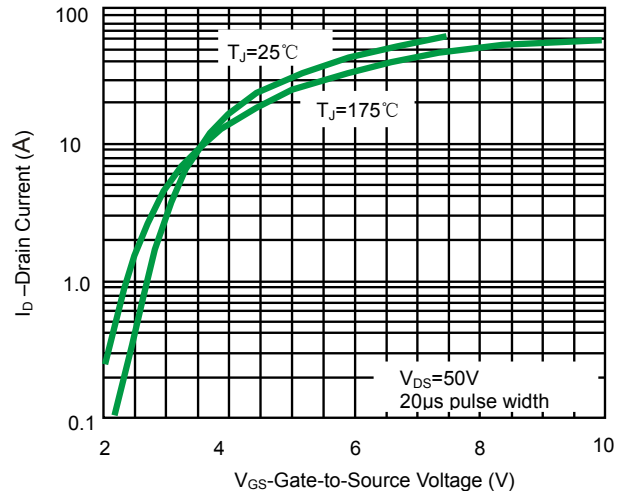


Fig 2. Transfer Characteristics

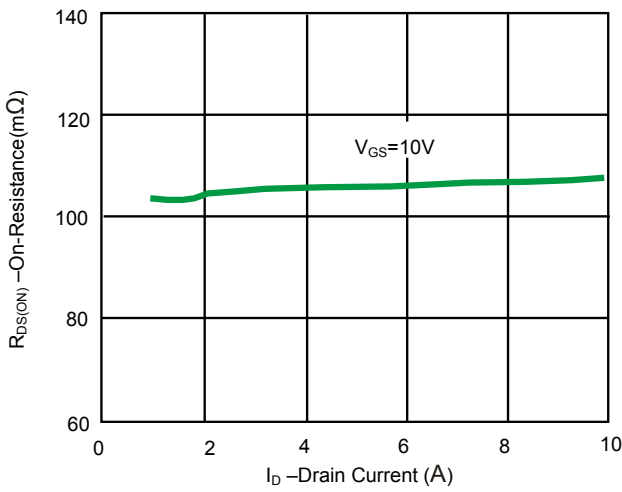


Fig 3. On-Resistance vs. Drain Current

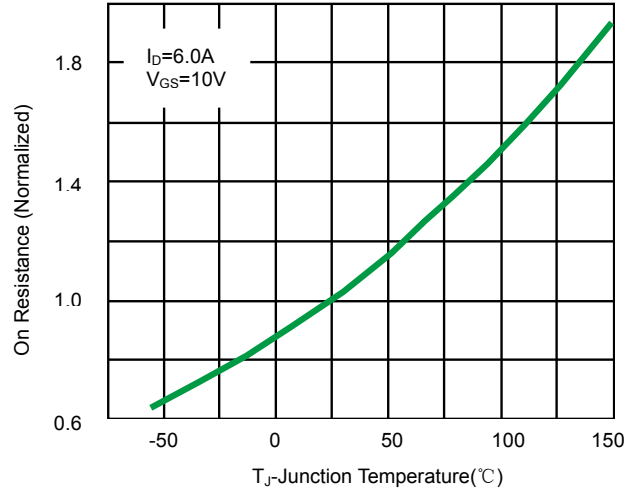


Fig 4. On Resistance vs. Junction Temperature

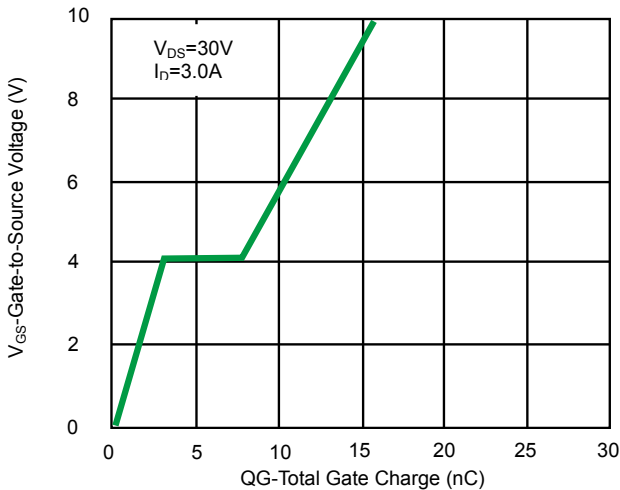


Fig 5. Gate Charge

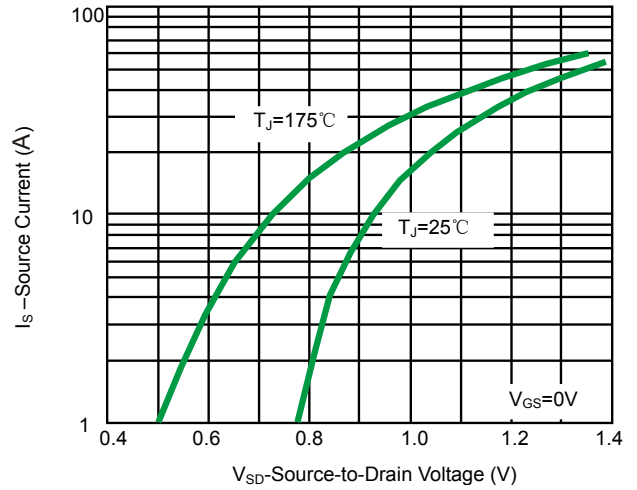


Fig 6. Source to Drain Diode Forward Voltage

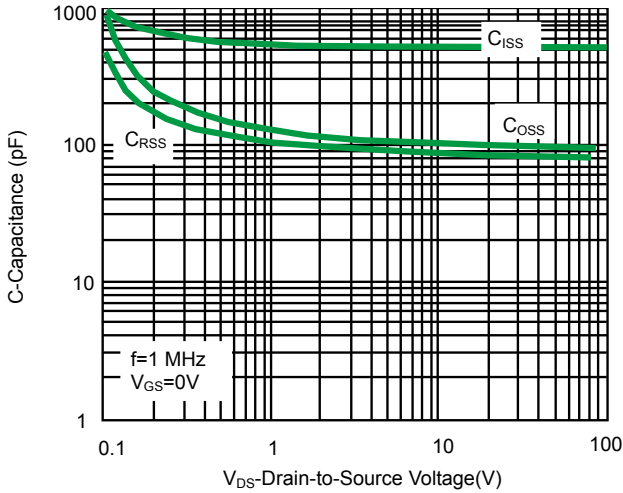


Fig 7. Capacitance

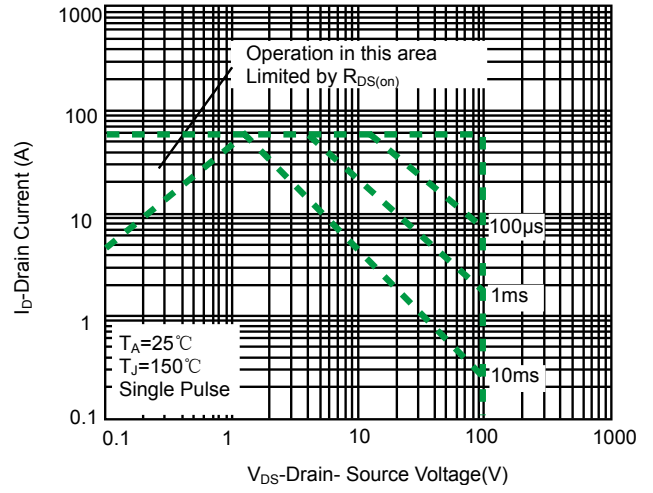


Fig 8. Maximum Forward Biased Safe Operating Area

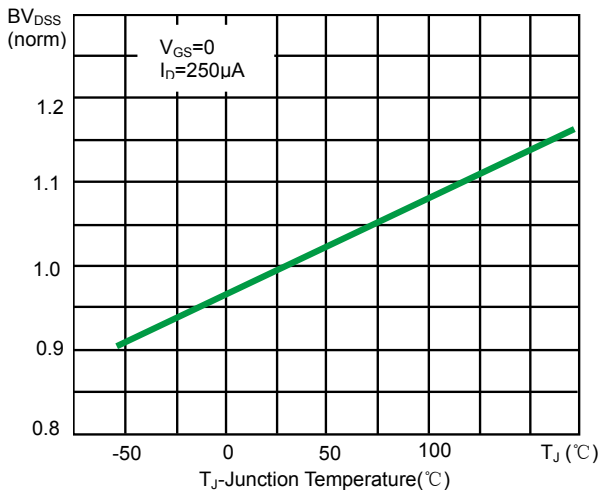


Fig 9. BV_{DSS} vs. Junction Temperature

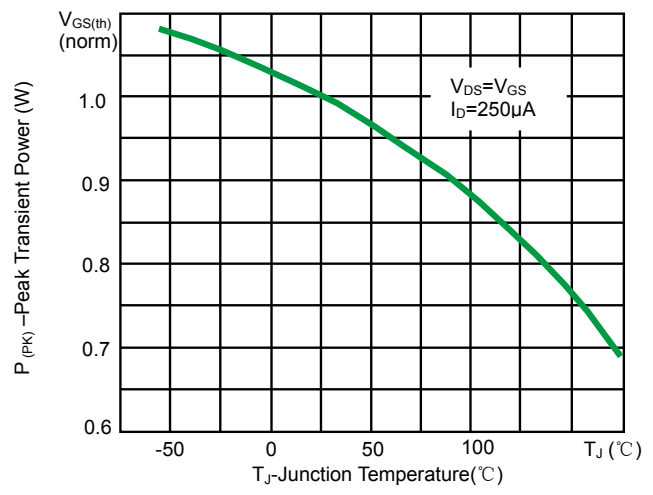


Fig 10. V_{GS(th)} vs. Junction Temperature

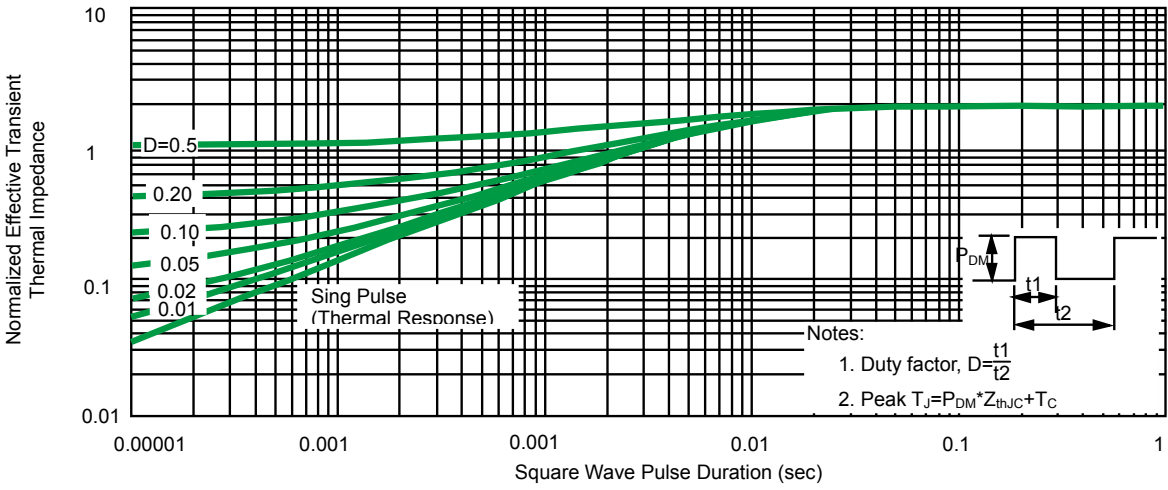
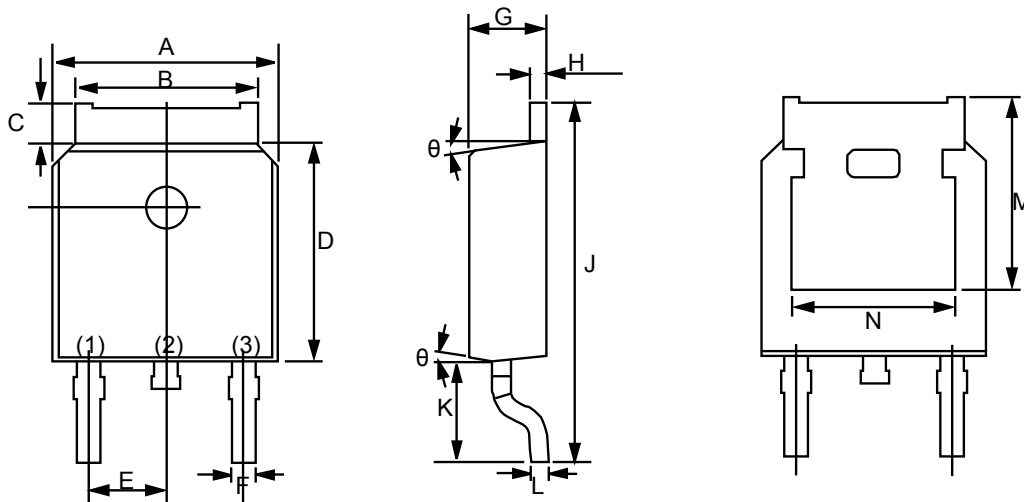



Fig 11. Normalized Maximum Transient Thermal Impedance

Product dimension(TO-252)



Dim	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	6.50	6.70	0.255	0.263
B	5.23	5.46	0.205	0.214
C	0.90	1.25	0.035	0.049
D	6.00	6.20	0.236	0.244
E	2.286BSC.		0.09BSC.	
F	0.72	0.85	0.028	0.033
G	2.20	2.38	0.086	0.093
H	0.47	0.58	0.018	0.022
J	9.90	10.30	0.389	0.405
K	2.90REF.		0.114REF.	
L	0.51BSC.		0.020BSC.	
M	5.30REF.		0.208REF.	
N	4.70	4.92	0.185	0.193
θ	5°	9°	5°	9°


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