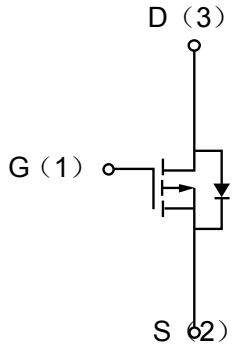
Description

The enhancement mode MOS is extremely high density cell and low on-resistance.

MOSFET Product Summary		
V_{DS}(V)	$R_{DS(on)}$(Ω)	I_D(A)
-12	0.045 @ V_{GS}=-4.5V	-4.3



Absolute maximum rating@25℃

Rating		Symbol	Value	Units
Drain-Source Voltage		V_{DS}	-12	V
Gate-Source Voltage		V_{GS}	±8.0	V
Drain Current	Continuous T_A=25℃	I_D	-4.3	A
	Pulsed T_A=70℃	I_D	-3.4	A
Pulsed Drain Current		I_{DM}	-34	A
Total Power Dissipation	T_A=25℃	P_D	1.3	W
	T_A=125℃	P_D	0.8	W
Linear Derating Factor			0.01	W/℃
Single Pulse Avalanche Energy		E_{AS}	33	mJ
Junction and Storage Temperature Range		T_J,T_{STG}	-55 to +150	℃

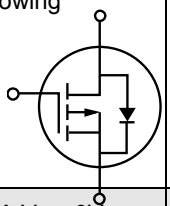
Thermal resistance

Parameter	Symbol	Typ.	Max.	Units
Maximum Junction-to-Ambient	$R_{\theta JA}$	75	100	℃/W

Electrical characteristics per line@25℃(unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Drain-Source Breakdown Voltage	BV_{DSS}	I_D =-250μA,V_{GS}=0V	-12	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =-12V,V_{GS}=0V	-	-	-1.0	μA
Gate-to-Source Forward Leakage	I_{GSS}	V_{GS}=-8.0V	-	-	-100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-0.45	-0.7	-1.0	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=-4.5V, I_D =-4.3A	-	-	0.045	Ω
		V_{GS}=-2.5V, I_D =-2.5A	-	-	0.060	Ω
		V_{GS}=-1.8V, I_D =-2.0A	-	-	0.100	Ω
Forward Trans conductance	g_{FS}	V_{DS}=-10V, I_D =-4.3A	8.6	-	-	S
Total Gate Charge	Qg	I_D =-4.3A, V_{DS} =-10V, V_{GS} =-5.0V	-	7.8		nC
Gate-to-Source Charge	Qgs		-	1.4		
Gate-to-Drain(Miller) Charge	Qgd		-	1.6		
Input Capacitance	C_{ISS}	V_{GS}=0V, V_{DS} =-10V, f=1MHz	-	750		pF
Output Capacitance	C_{DSS}		-	230		pF
Reverse Transfer Capacitance	C_{RSS}		-	160		pF
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=-6.0V, I_D =-1.0A, R_D=6.0Ω, R_G=89Ω	-	11	-	ns
Rise Time	t_r		-	32	-	
Turn-Off Delay Time	$t_{d(off)}$		-	250	-	
Fall Time	t_f		-	210	-	

Source-Drain Rating and Characteristics

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Continuous Source Current (Body Diode)	I_S	MOSFET symbol showing the integral reverse p-n junction diode 	-	-	-1.6	A
Diode Forward Voltage	V_{SD}	T_J=25℃,I_S=-1.3A,V_{GS}=0V	-	-	-1.2	V
Reverse Recovery Time	t_{rr}	T_J=25℃,I_F=-1.3A,di/dt=-100A/μs	-	22	33	ns
Reverse Recovery Charge	Q_{rr}		-	8.0	12	nC

Typical Characteristics

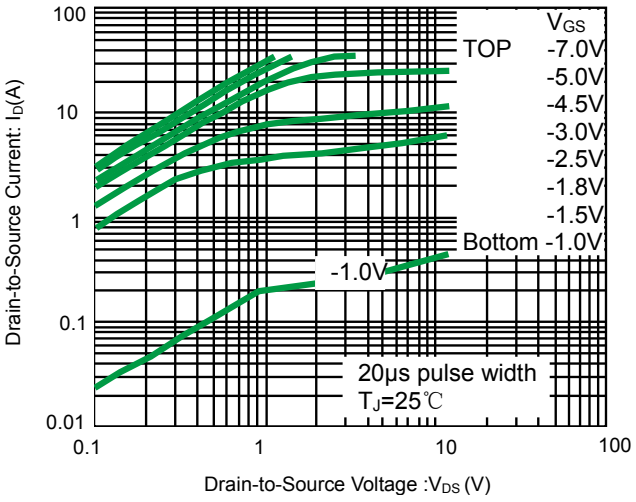


Fig 1. Typical output characteristics

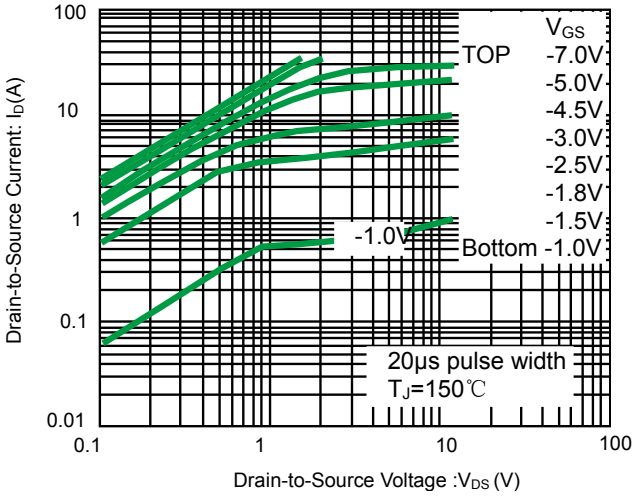


Fig 2. Typical output characteristics

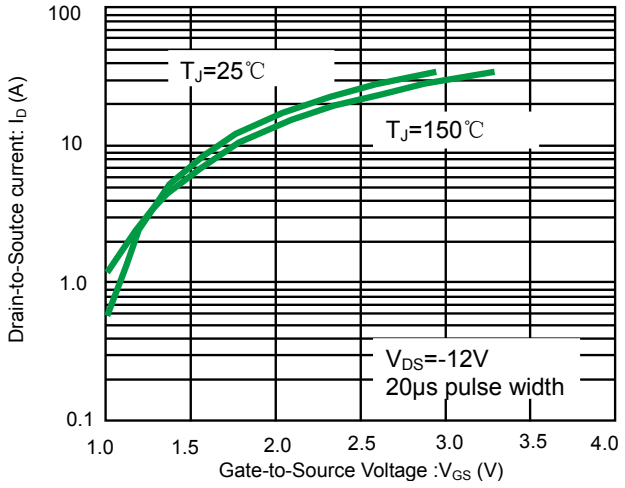


Fig 3. Typical transfer characteristics

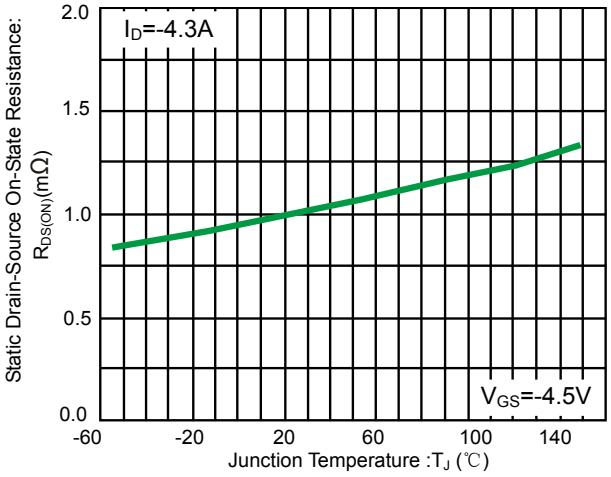


Fig 4. Normalized On-Resistance vs, Temperature

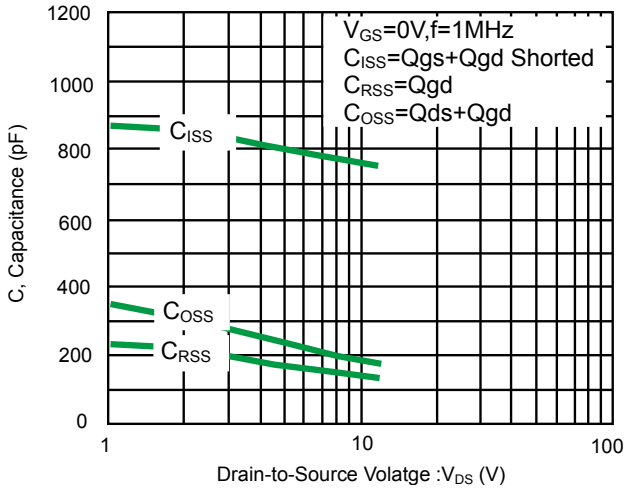


Fig 5. Typical Capacitance vs. Drain-to-Source voltage

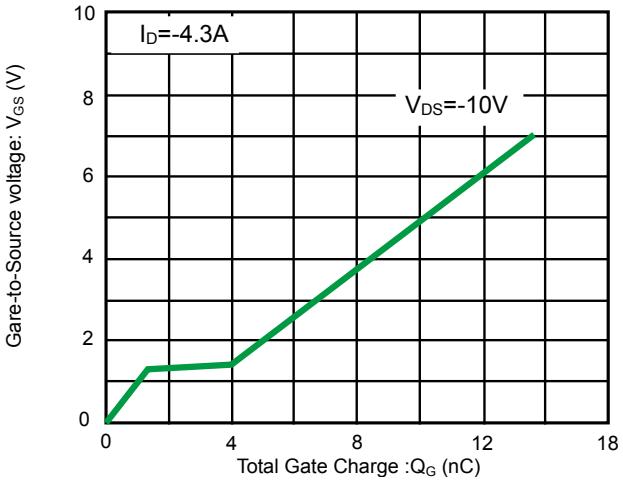


Fig 6. Typical Gate Charge vs. Gate-to-Source voltage

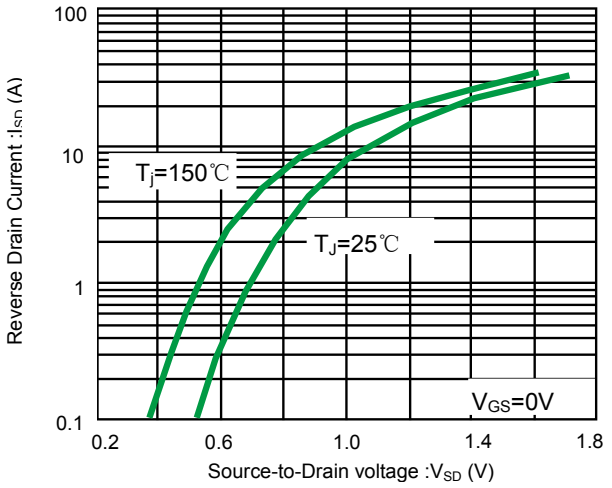


Fig 7. Typical Source-Drain Diode Forward Voltage

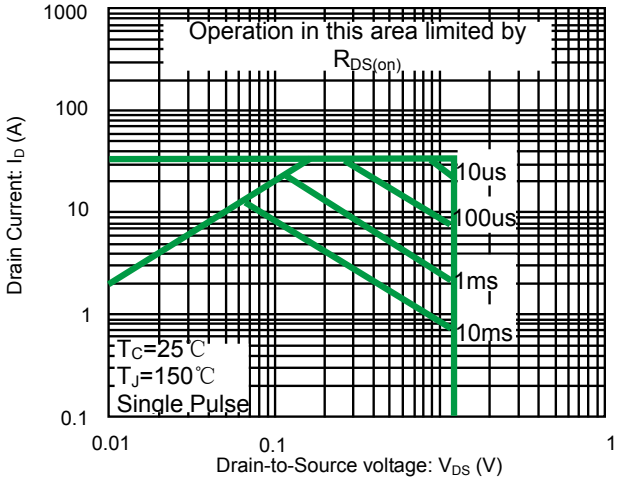


Fig 8. Maximum Safe Operating Area

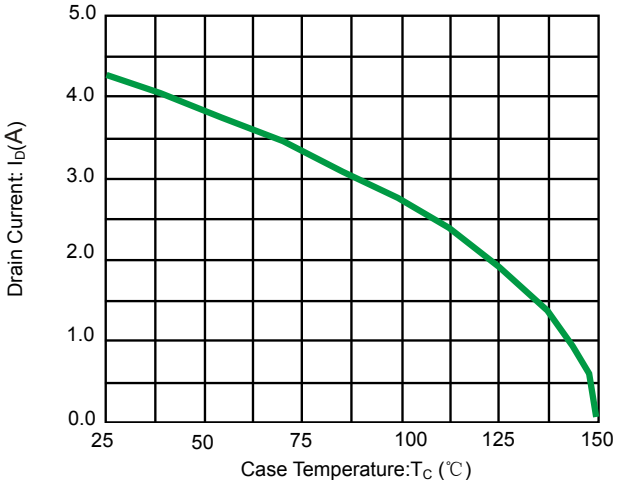


Fig 9. Maximum Drain Current vs. Case Temperature

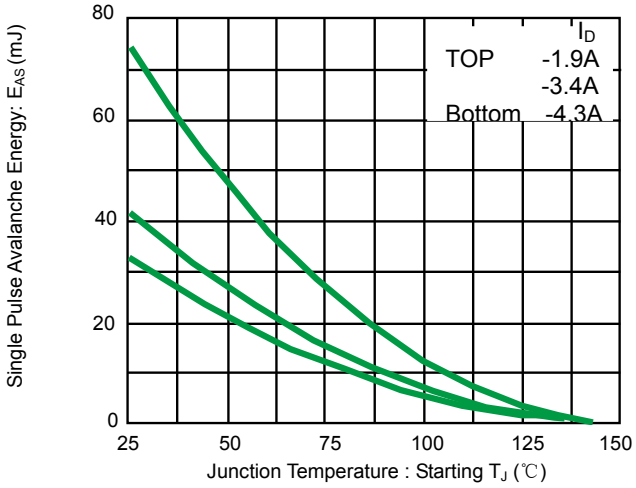


Fig 10. Maximum Avalanche Energy vs. Drain Current

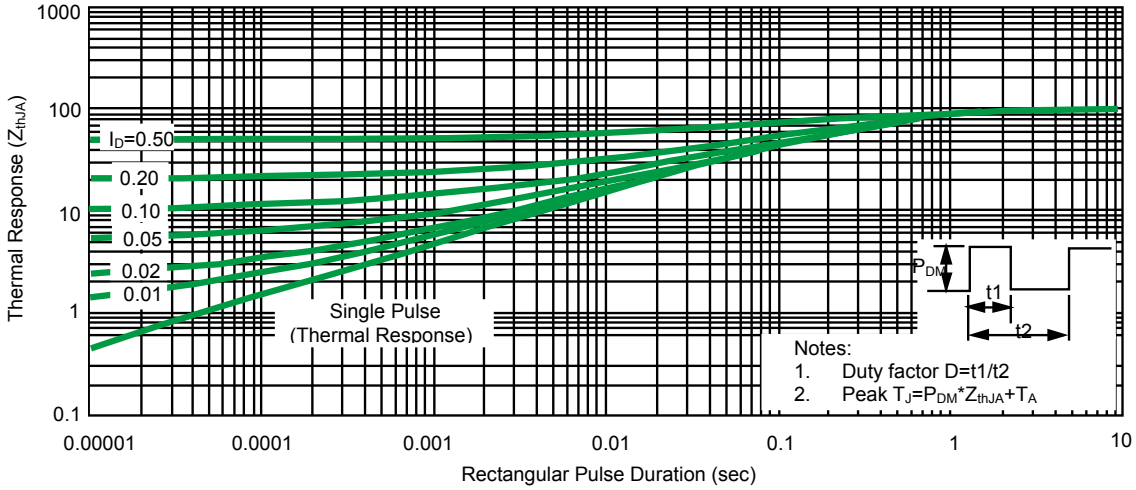


Fig 11. Maximum Effective Transient Thermal Impedance, Junction-to-Ambient

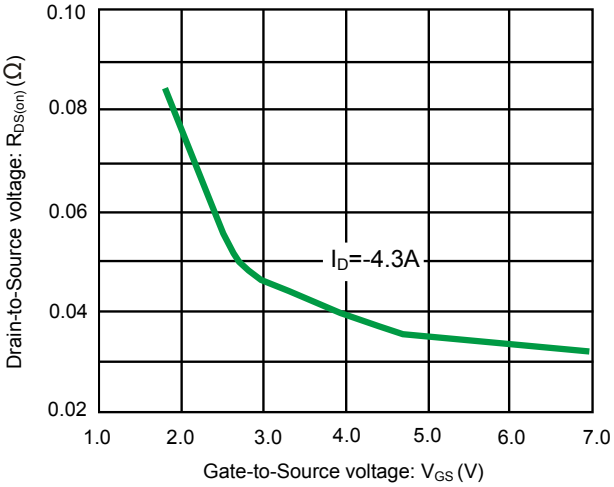


Fig 12. Typical On-Resistance vs. Gate Voltage

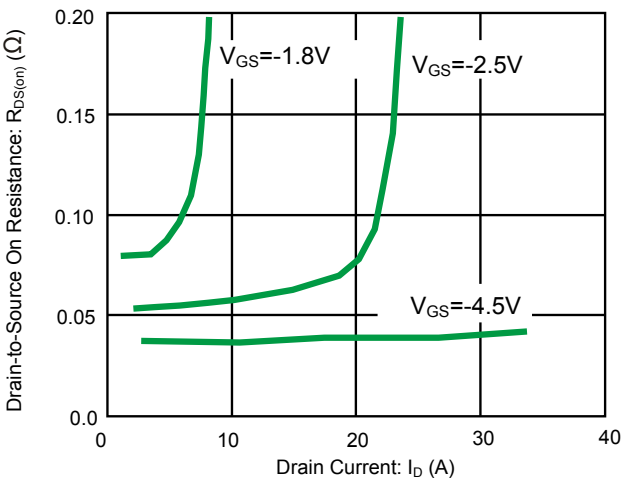


Fig 13. Typical On-Resistance vs. Drain Current

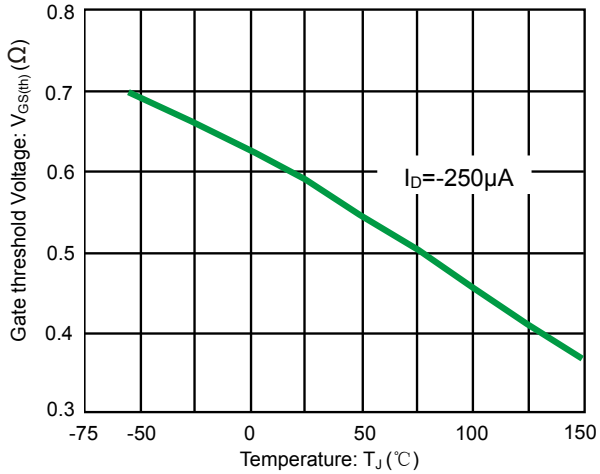
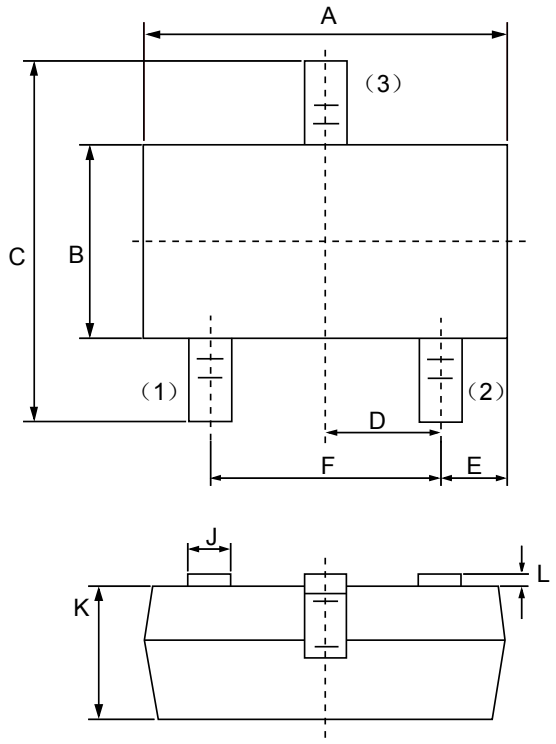
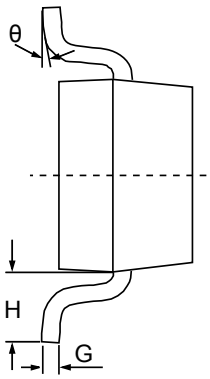


Fig14. Typical Threshold Voltage vs. Junction Temperature

Product dimension(SOT-23)





Dim	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	2.80	3.00	0.1102	0.1197
B	1.20	1.40	0.0472	0.0551
C	2.10	2.50	0.0830	0.0984
D	0.89	1.02	0.0350	0.0401
E	0.45	0.60	0.0177	0.0236
F	1.78	2.04	0.0701	0.0807
G	0.085	0.177	0.0034	0.0070
H	0.45	0.60	0.0180	0.0236
J	0.37	0.50	0.0150	0.0200
K	0.89	1.11	0.0350	0.0440
L	0.013	0.100	0.0005	0.0040
θ	0°	10°	0°	10°

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