Dual N-channel Enhancement Mode Power MOSFET

V_{DSS}	20V
I_D	6.5A
$R_{DS(ON)_MAX}$ @V_{GS}=4.5V	17mΩ

DESCRIPTION：

·Excellent $R_{DS(ON)}$, and Low Gate Charge

·Advanced Trench Technology

·Lead Free

·100% UIS Tested

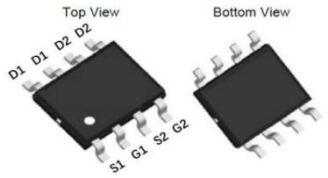
·100% ΔVds Tested

TYPICAL APPLICATIONS：

·Load Switch

·PWM Application

·Power Management



SOP-8

MAXIMUM RATINGS (at T_C = 25 °C, unless otherwise specified)

Characteristic	Condition	Symbol	Value	Unit
Drain-Source Voltage		V_{DSS}	20	V
Gate-Source Voltage		V_{GS}	±12	V
Continuous Drain Current	Tc=25℃ Tc=100℃	I_D	6.5 4.1	A
Pulsed Drain Current (1)		I_{DM}	26	A
Single Pulse Avalanche Energy (2)		E_{AS}	16	mJ
Power dissipation	Tc=25℃	P_D	1.8	W
Junction & Storage temperature Range		T_J, T_{STG}	-55~+150	℃

THERMAL CHARACTERISTICS

Characteristic	Condition	Symbol	Value	Unit
Thermal resistance,	Junction to Ambient	$R_{\theta JA}$	70	℃/W

NOTES:

1. Repetitive Rating: Pulse width limited by maximum junction temperature

2. E_{AS} condition: Starting T_J=25℃, V_{DD}=10V, V_{GS}=10V, R_G=25ohm, L=0.5mH, I_{AS}=8A

ELECTRICAL CHARATERISTICS (at T_J = 25 °C, unless otherwise specified)

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage VGS = 0V, ID = 250uA	$V_{(BR)DSS}$	20			V
Zero Gate Voltage Drain Current VDS = 20 V, VGS = 0 V	I_{DSS}			1.0	uA
Gate-Source Leakage Current VGS = ±12V, VDS = 0V	I_{GSS}			±100	nA
Gate-Source threshold voltage VDS = VGS, ID = 250uA	$V_{GS(th)}$	0.5	0.75	1.0	V
Drain-Source On-State Resistance VGS = 4.5V, ID = 6.5A VGS = 2.5V, ID = 5A	$R_{DS(on)}$		13 17	17 21	mΩ
Input capacitance f=1MHz, VDS=10 V, VGS=0 V	C_{iss}		712		pF
Output capacitance f=1MHz, VDS=10 V, VGS=0 V	C_{oss}		116		pF
Reverse transfer capacitance f=1MHz, VDS=10 V, VGS=0 V	C_{rss}		103		pF
Total Gate Charge VDS= 10V, ID= 3A, VGS= 0 to 4.5V	Q_G		9		nC
Gate to Source Charge VDS= 10V, ID= 3A, VGS= 0 to 4.5V	Q_{GS}		1.5		nC
Gate to Drain Charge VDS= 10V, ID= 3A, VGS= 0 to 4.5V	Q_{GD}		2.5		nC
Turn-on delay time VDS= 10V, ID= 3A, VGS= 4.5V, R_{GEN}=3Ω	$td_{(ON)}$		5		ns
Rise time VDS= 10V, ID= 3A, VGS= 4.5V, R_{GEN}=3Ω	tr		16		ns
Turn-off delay time VDS= 10V, ID= 3A, VGS= 4.5V, R_{GEN}=3Ω	$td_{(OFF)}$		23		ns
Fall time VDS= 10V, ID= 3A, VGS= 4.5V, R_{GEN}=3Ω	tf		7		ns
Revers Recovery Time IS=3A, di/dt = 100A/us	Trr		7		ns
Revers Recovery Charge IS=3A, di/dt = 100A/us	Qrr		2		nC
Maximum Continuous Drain to Source Diode Forward Current	IS			6.5	A
Maximum Pulsed Drain to Source Diode Forward Current	ISM			26	A
Diode Forward Voltage VGS = 0V, I_S = 6.5A	V_{SD}			1.2	V

Typical Performance Characteristics

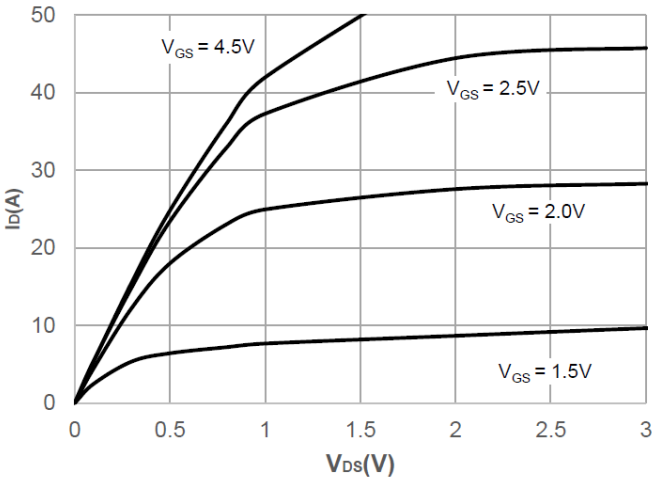


Figure 1. Output Characteristics

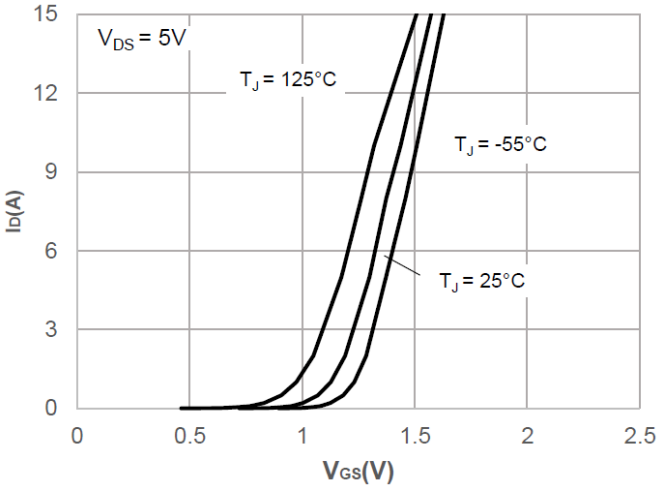


Figure 2. Typical Transfer Characteristics

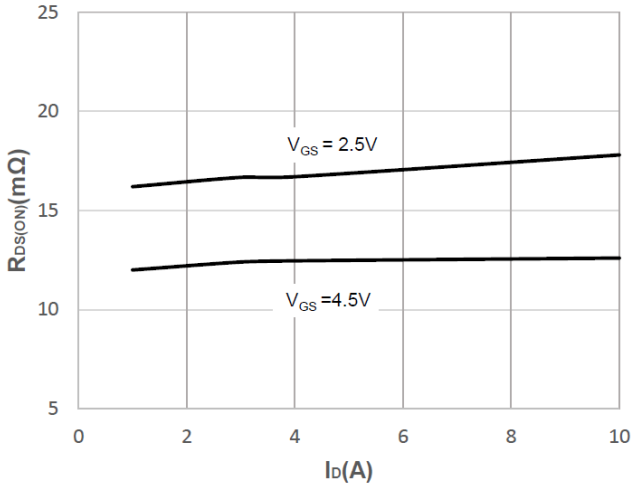


Figure 3. On-resistance vs. Drain Current

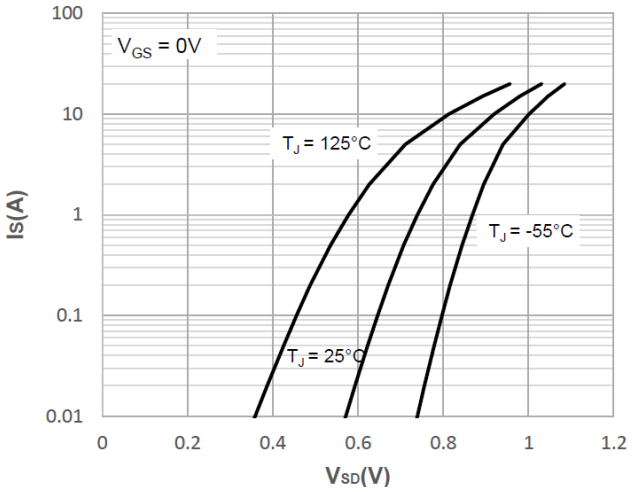


Figure 4. Body Diode Characteristics

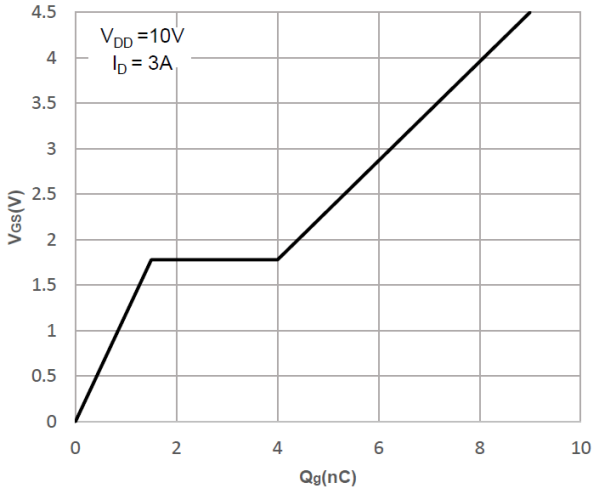


Figure 5. Gate Charge Characteristics

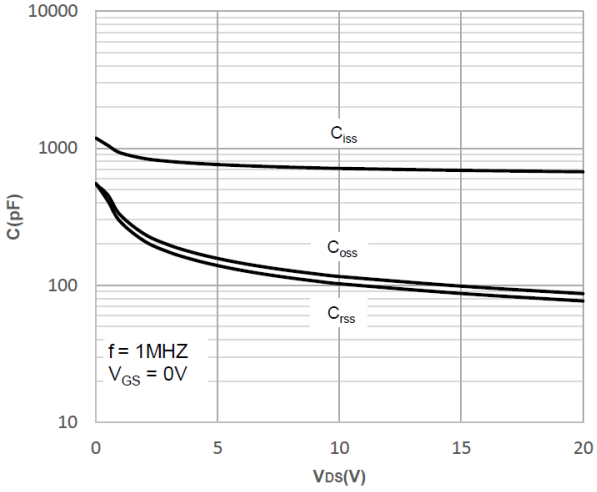


Figure 6. Capacitance Characteristics

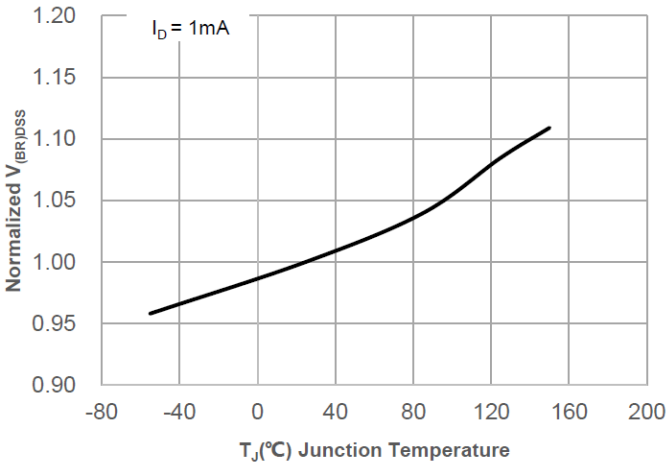


Figure 7. Normalized Breakdown voltage vs. Junction Temperature

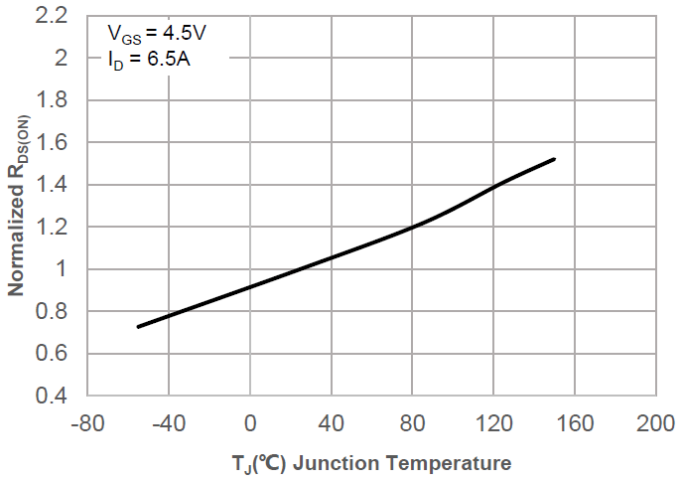


Figure 8. Normalized on Resistance vs. Junction Temperature

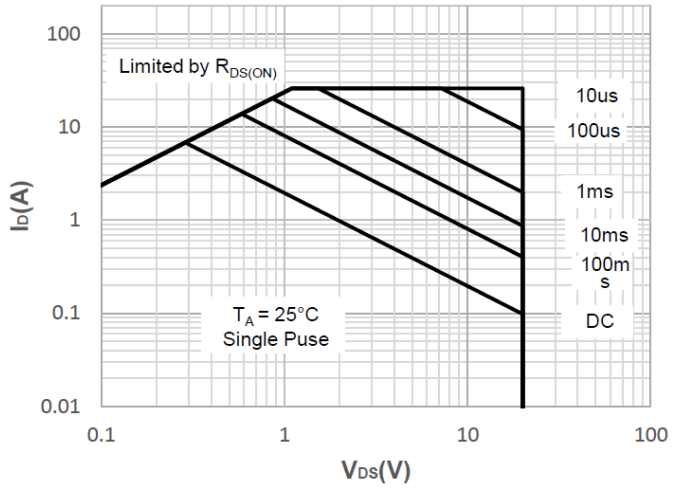


Figure 9. Maximum Safe Operating Area

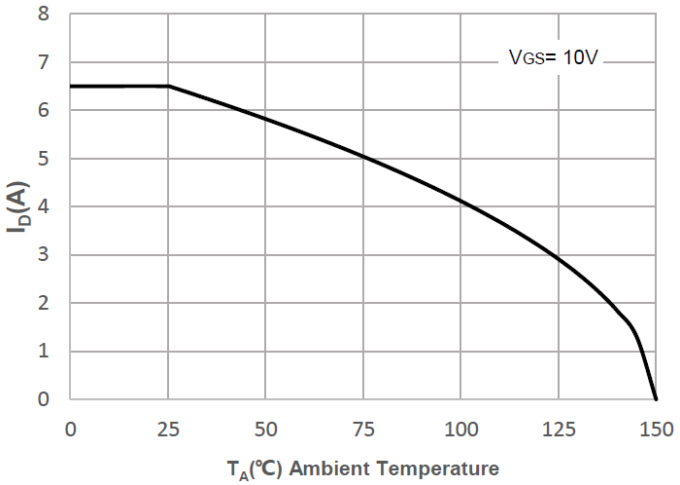


Figure 10. Maximum Continuous Drian Current vs. Ambient Temperature

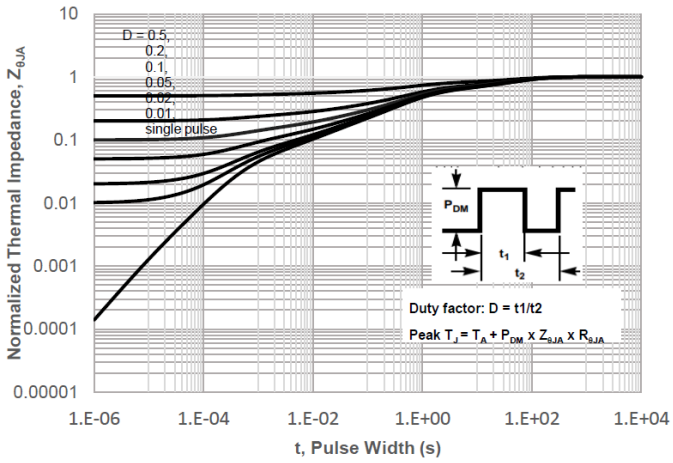


Figure 11. Normalized Maximum Transient Thermal Impedance

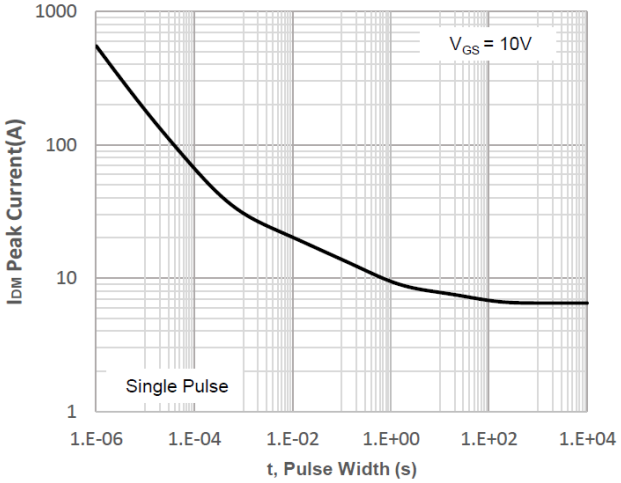
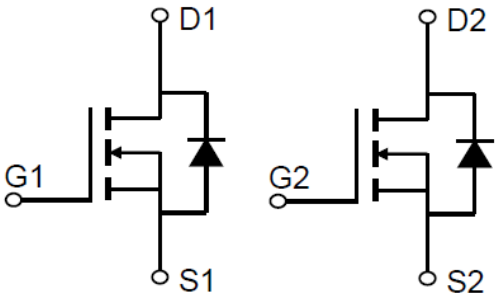
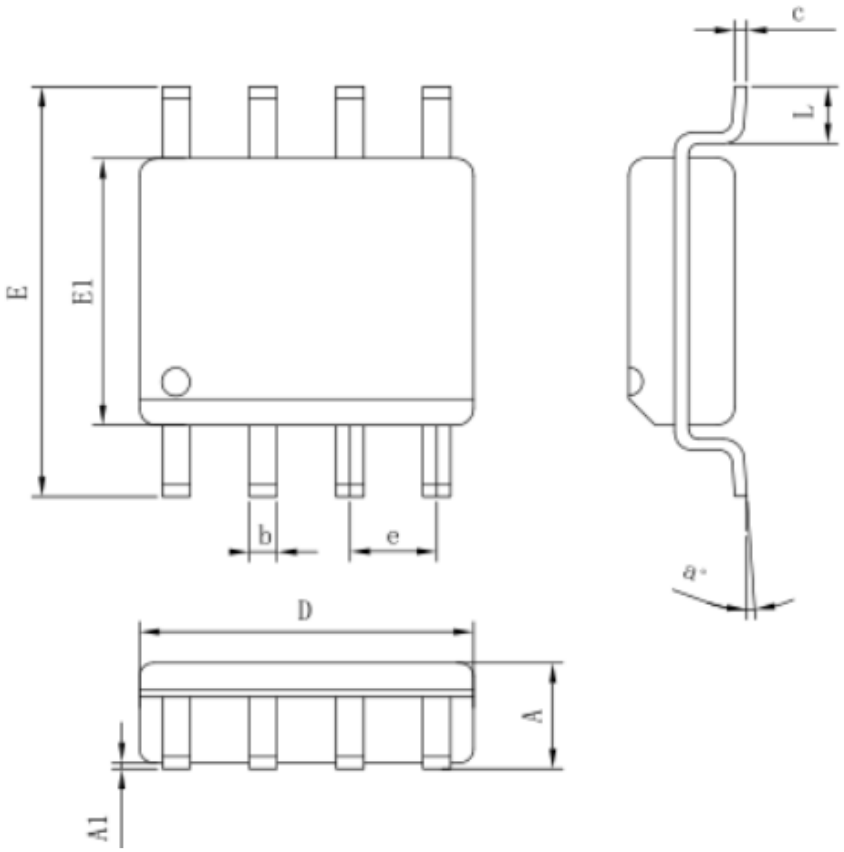


Figure 12. Peak Current Capacity

·Circuit diagram



·Package outlines : Dimensions in (mm)



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	--	--	1.75
A1	0.10	--	0.23
b	0.35	--	0.48
c	0.19	--	0.25
D	4.70	4.90	5.00
E	5.80	6.00	6.20
E1	3.70	3.90	4.10
e	1.27BSC		
L	0.50	--	0.80
a°	0°	--	8°

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