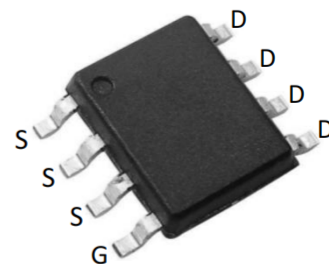


Description:

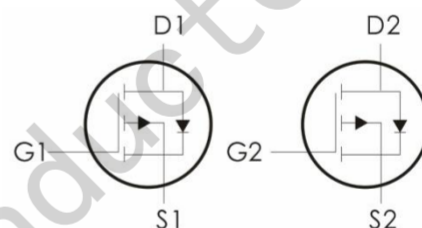
This P-Channel MOSFET uses advanced trench technology and design to provide excellent $R_{DS(on)}$ with low gate charge.

It can be used in a wide variety of applications.



Features:

- 1) $V_{DS}=-30V, I_D=-8A, R_{DS(on)}<20m\Omega @V_{GS}=-10V$
- 2) Low gate charge.
- 3) Green device available.
- 4) Advanced high cell density trench technology for ultra low $R_{DS(on)}$.
- 5) Excellent package for good heat dissipation.



Absolute Maximum Ratings: ($T_A=25^\circ C$ unless otherwise noted)

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	-30	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current- $T_A=25^\circ C$	-8	A
	Continuous Drain Current- $T_A=100^\circ C$	-5	
I_{DM}	Drain Current-Pulsed ¹	-37	A
P_D	Power Dissipation	3.3	W
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 to +150	$^\circ C$

Thermal Characteristics:

Symbol	Parameter	Max	Units
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	37.9	$^\circ C/W$

Electrical Characteristics: ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250 μ A	-30	---	---	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{GS} =0V, V _{DS} =-30V	---	---	-1	μ A
I _{GSS}	Gate-Source Leakage Current	V _{GS} =± 20V, V _{DS} =0A	---	---	± 100	nA
On Characteristics						
V _{GS(th)}	GATE-Source Threshold Voltage	V _{GS} =V _{DS} , I _D =250 μ A	-1	-1.5	-2.4	V
R _{DS(ON)}	Drain-Source On Resistance	V _{GS} =-10V, I _D =-10A	---	16	20	m Ω
		V _{GS} =-4.5V, I _D =-5A	---	25	34	
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} =-15V, V _{GS} =0V, f=1MHz	---	1540	---	pF
C _{oss}	Output Capacitance		---	325	---	
C _{rss}	Reverse Transfer Capacitance		---	275	---	
Switching Characteristics						
t _{d(on)}	Turn-On Delay Time ^{3,4}	V _{DD} =-15V, V _{GS} =-10V I _D =-6A, R _{GEN} =2.5 Ω	---	13	---	ns
t _r	Rise Time ^{3,4}		---	18	---	ns
t _{d(off)}	Turn-Off Delay Time ^{3,4}		---	93	---	ns
t _f	Fall Time ^{3,4}		---	63	---	ns
Q _g	Total Gate Charge ^{3,4}	V _{DS} =-15V , V _{GS} =-10V , I _D =-9.1A	---	28	---	nC
Q _{gs}	Gate-Source Charge ^{3,4}		---	5.2	---	nC
Q _{gd}	Gate-Drain “Miller” Charge ^{3,4}		---	7.5	---	nC
Drain-Source Diode Characteristics						
V _{SD}	Diode Forward Voltage	V _{GS} =0V, I _S =-10A	---	-0.8	-1.2	V
I _S	Maximum Continuous Drain to Source Diode Forward Current	VD=VG=0V	---	---	-8	A
I _{SM}	Max. Pulsed Forward Currentt		---	---	-37	A

Notes:

1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature
2. Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$

Typical Characteristics: ($T_A=25^\circ\text{C}$ unless otherwise noted)

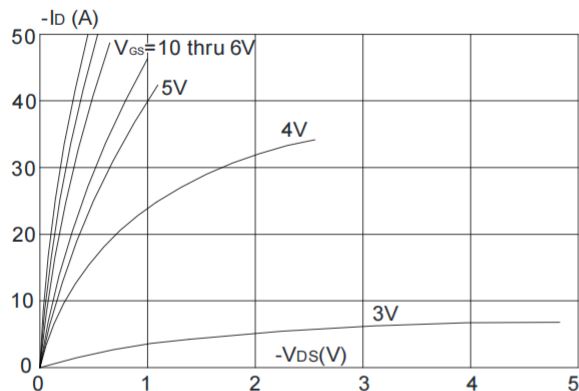


Figure 1: Output Characteristics

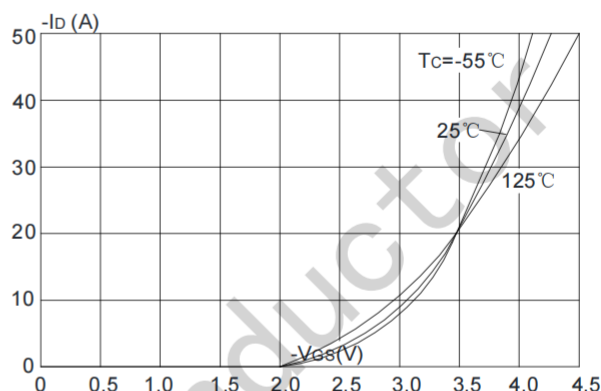


Figure 2: Typical Transfer Characteristics

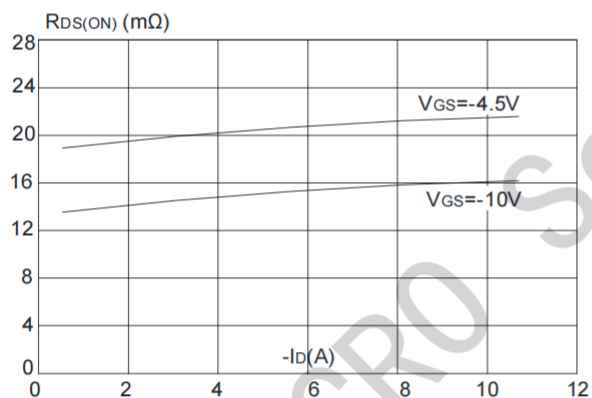


Figure 3: On-resistance vs. Drain Current

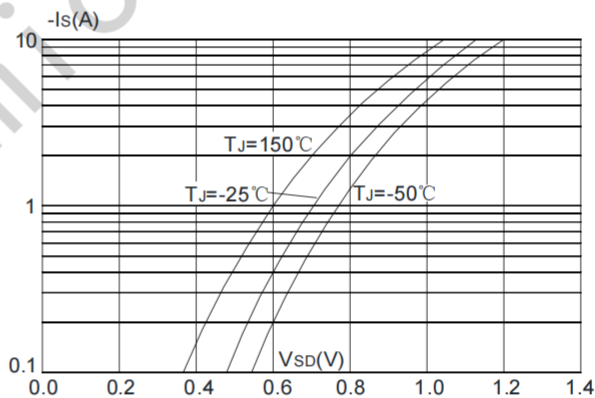


Figure 4: Body Diode Characteristics

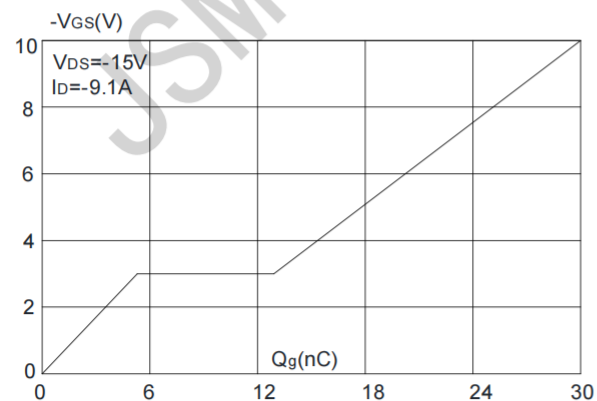


Figure 5: Gate Charge Characteristics

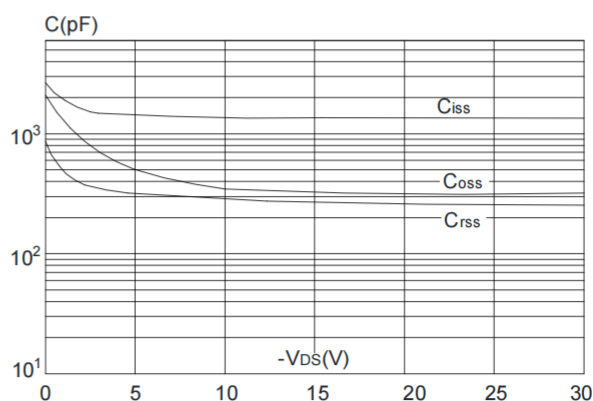


Figure 6: Capacitance Characteristics

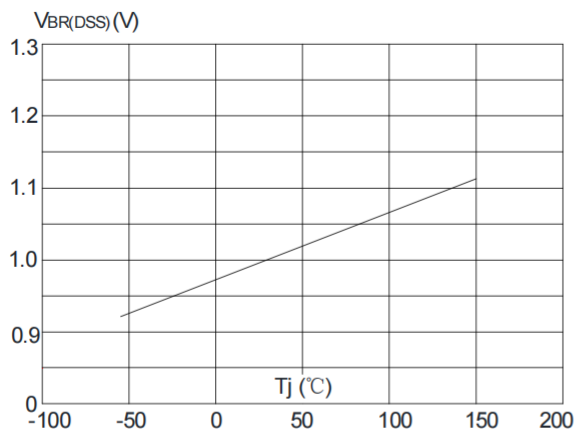


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

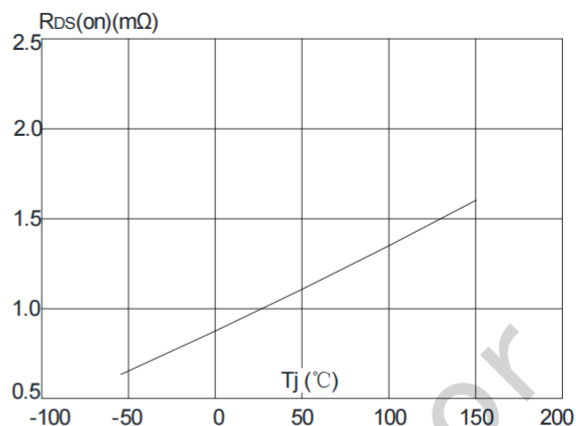


Figure 8: Normalized on Resistance vs. Junction Temperature

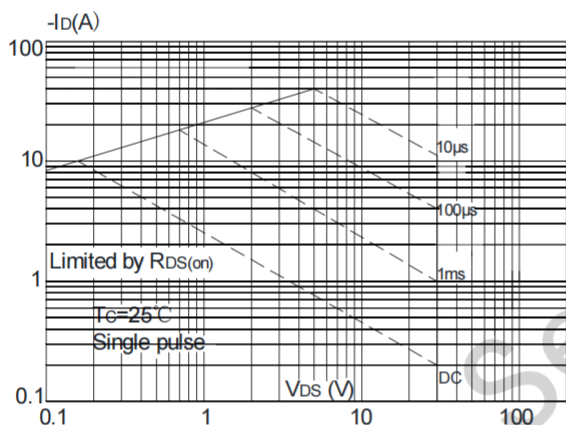


Figure 9: Maximum Safe Operating Area

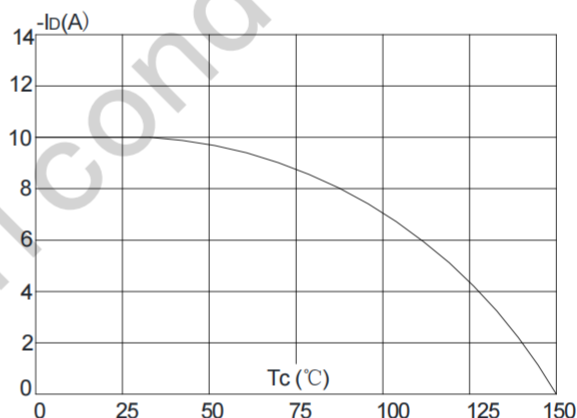


Figure 10: Maximum Continuous Drain Current vs. Case Temperature

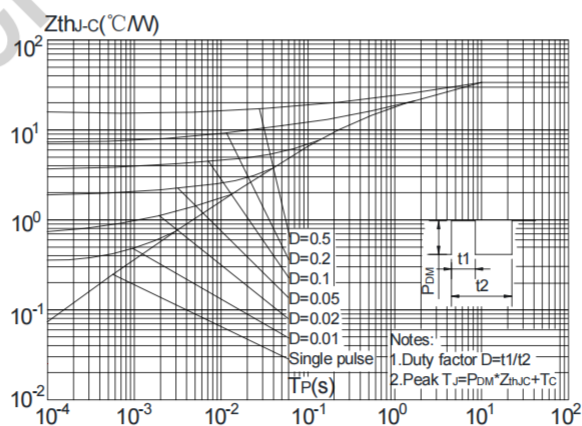
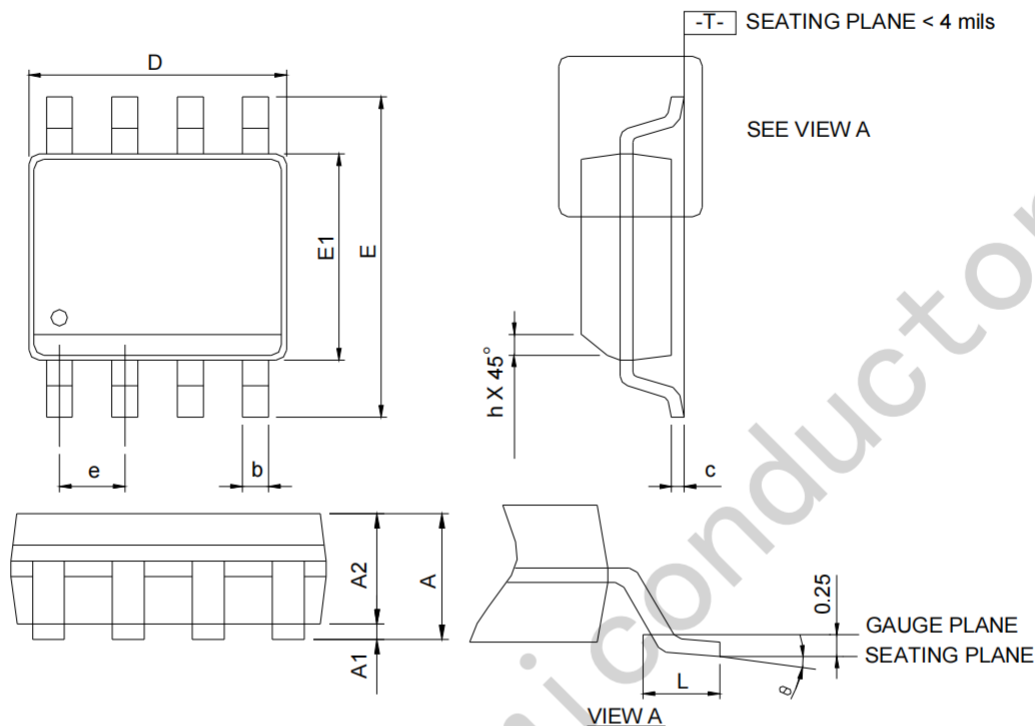


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Ambient

Package Information

SOP-8



SYMBOL	SOP-8			
	MILLIMETERS		INCHES	
	MIN.	MAX.	MIN.	MAX.
A	-	1.75	-	0.069
A1	0.10	0.25	0.004	0.010
A2	1.25	-	0.049	-
b	0.31	0.51	0.012	0.020
c	0.17	0.25	0.007	0.010
D	4.80	5.00	0.189	0.197
E	5.80	6.20	0.228	0.244
E1	3.80	4.00	0.150	0.157
e	1.27 BSC		0.050 BSC	
h	0.25	0.50	0.010	0.020
L	0.40	1.27	0.016	0.050
θ	0°	8°	0°	8°

Note: 1. Follow JEDEC MS-012 AA.

2. Dimension "D" does not include mold flash, protrusions or gate burrs.
Mold flash, protrusion or gate burrs shall not exceed 6 mil per side.

3. Dimension "E" does not include inter-lead flash or protrusions.
Inter-lead flash and protrusions shall not exceed 10 mil per side.

RECOMMENDED LAND PATTERN

