

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-40V	26mΩ@-10V	-7A
	37mΩ@-4.5V	

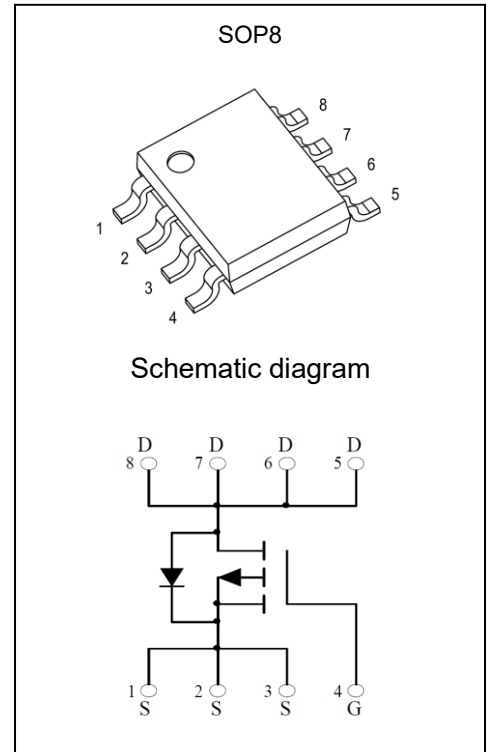
Feature

- Trench Technology Power MOSFET
- Low $R_{DS(ON)}$
- Low Gate Charge
- Low Gate Resistance
- 100% UIS Tested

Application

- Power Switching Application

MARKING:



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ C$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain - Source Voltage	V_{DS}	-40	V
Gate - Source Voltage	V_{GS}	±20	V
Continuous Drain Current ^{1,5}	I_D	-7	A
$T_A = 25^\circ C$			
Pulsed Drain Current ²	I_{DM}	-28	A
Single Pulsed Avalanche Current ³	I_{AS}	-19.5	A
Single Pulsed Avalanche Energy ³	E_{AS}	95	mJ
Power Dissipation ⁵	P_D	2.1	W
$T_A = 25^\circ C$			
Thermal Resistance from Junction to Ambient ⁶	$R_{\theta JA}$	59	$^\circ C/W$
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature	T_{STG}	-55~ +150	$^\circ C$

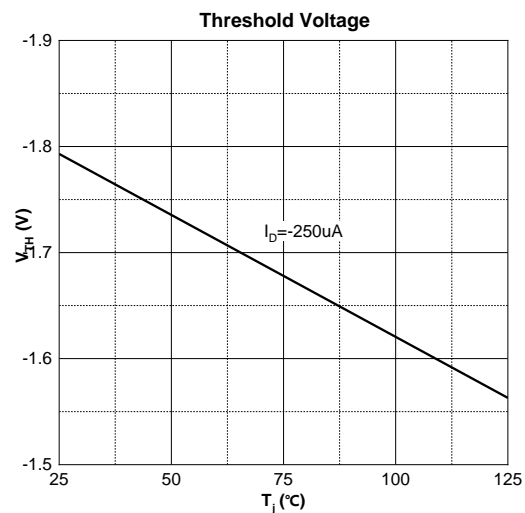
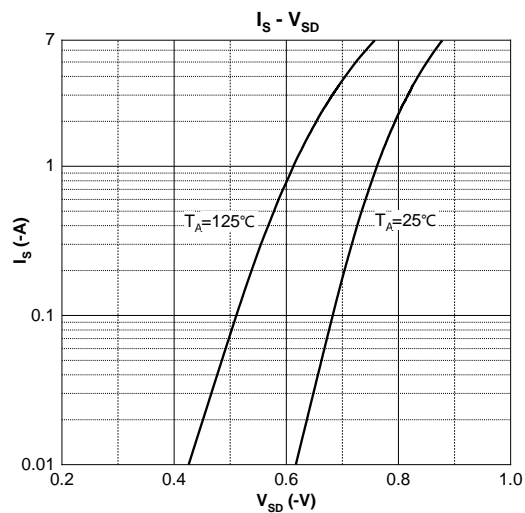
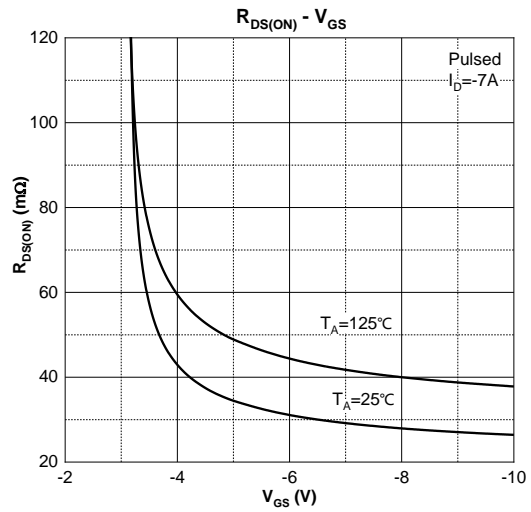
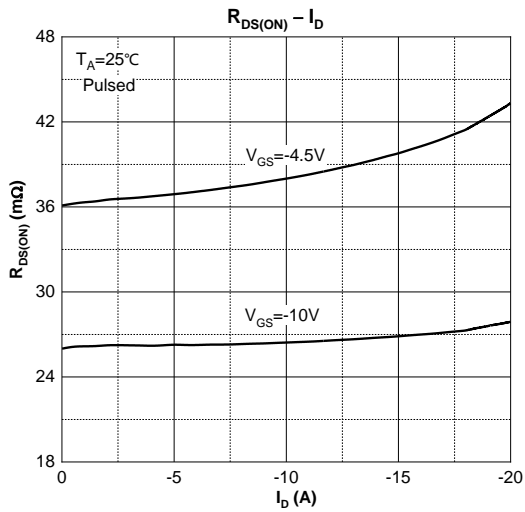
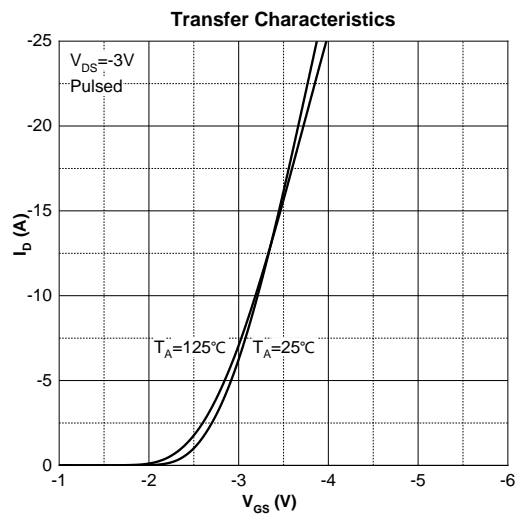
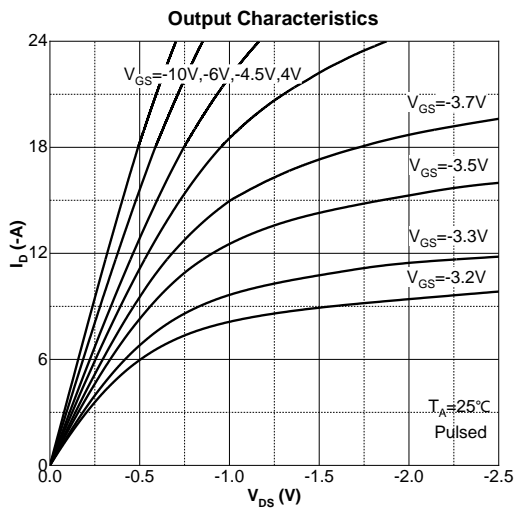
MOSFET ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-40			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -40V, V_{GS} = 0V$			-1	μA
Gate - Body Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
On Characteristics⁴						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1.2	-1.8	-2.5	V
Drain-source On-resistance	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -5A$		26	34	m Ω
		$V_{GS} = -4.5V, I_D = -5A$		37	51	
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = -20V, V_{GS} = 0V, f = 1MHz$		1305		pF
Output Capacitance	C_{oss}			116		
Reverse Transfer Capacitance	C_{rss}			101		
Gate Resistance	R_g	$V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$		5.4		Ω
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS} = -20V, V_{GS} = -10V, I_D = -5A$		25.5		nC
Gate-source Charge	Q_{gs}			3.7		
Gate-drain Charge	Q_{gd}			5.5		
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = -20V, V_{GS} = -10V,$ $R_L = 1.25\Omega, R_G = 3\Omega$		11.3		ns
Turn-on Rise Time	t_r			4.5		
Turn-off Delay Time	$t_{d(off)}$			35		
Turn-off Fall Time	t_f			46.4		
Source - Drain Diode Characteristics						
Diode Forward Voltage ³	V_{SD}	$V_{GS} = 0V, I_S = -1A$			-1.2	V

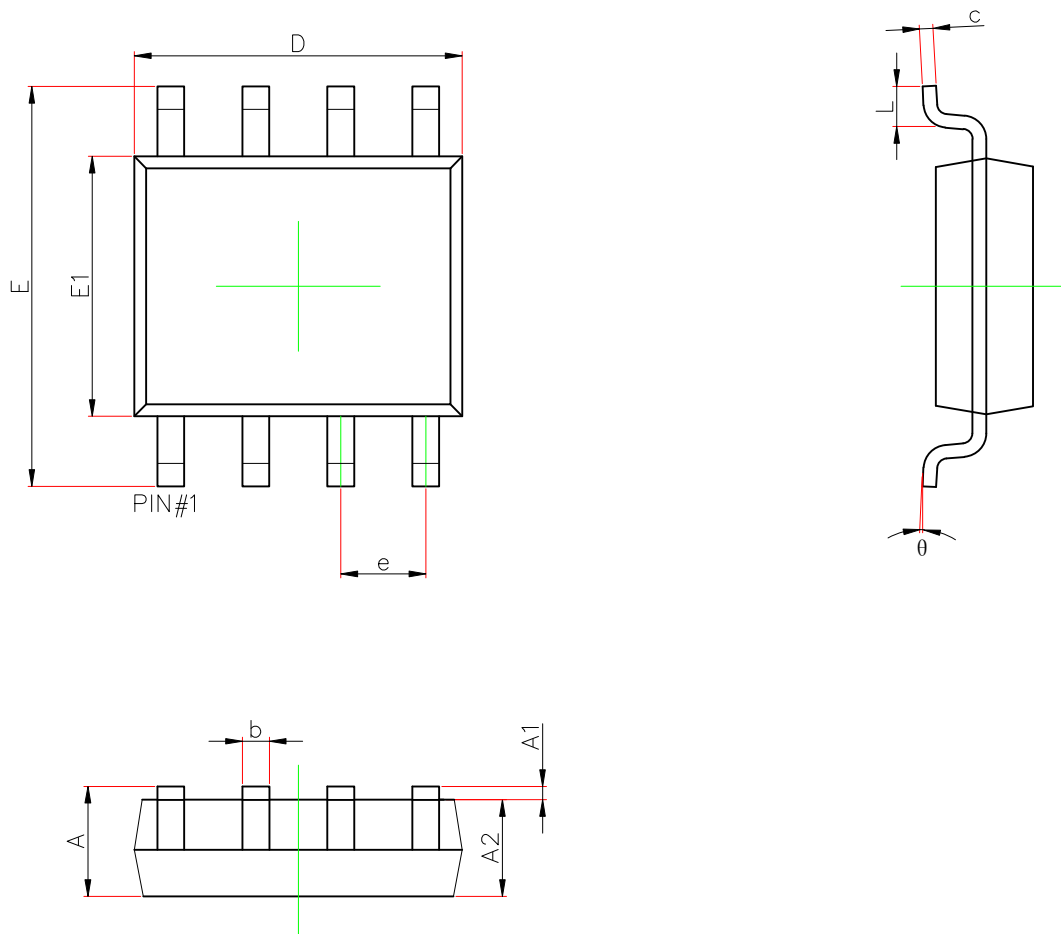
Notes :

- 1.The maximum current rating is limited by package.And device mounted on a large heatsink
- 2.Pulse Test : Pulse Width $\leq 10\mu s$, duty cycle $\leq 1\%$.
- 3.EAS condition: $V_{DD} = -20V, V_{GS} = -10V, L = 0.5mH, R_G = 25\Omega$ Starting $T_J = 25^\circ\text{C}$.
- 4.Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
- 5.The power dissipation P_D is limited by $T_{J(MAX)} = 150^\circ\text{C}$.And device mounted on a large heatsink
- 6.Device mounted on $1in^2$ FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$.

Typical Characteristics



SOP8 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.156	0.250	0.006	0.010
D	4.700	5.100	0.185	0.201
e	1.270(BSC)		0.050(BSC)	
E	5.800	6.200	0.228	0.244
E1	3.700	4.100	0.146	0.161
L	0.400	1.270	0.016	0.05
θ	0°	8°	0°	8°