

Product Summary

- $V_{DS} = -40V, I_D = -6A$
 $R_{DS(ON)} = 35m\Omega @ -10V$
 $R_{DS(ON)} = 45m\Omega @ -4.5V$

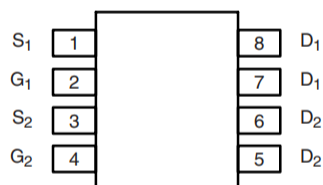
Application

- DC-DC Converters.
- Load switch.
- Power Management.

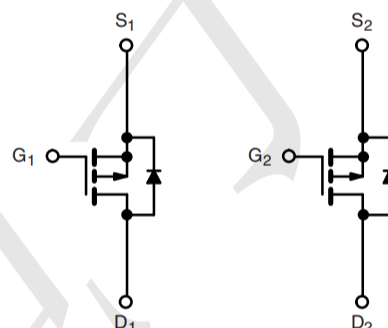
Package and Pin Configuration



SOP-8 top view



Circuit diagram



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	$T_A = 25^\circ C$	I_D	-6	A
	$T_A = 100^\circ C$		-3.8	
Pulsed Drain Current ¹		I_{DM}	-24	A
Single Pulse Avalanche Energy ²		E_{AS}	18	mJ
Total Power Dissipation	$T_A = 25^\circ C$	P_D	3	W
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55 to 150	$^\circ C$

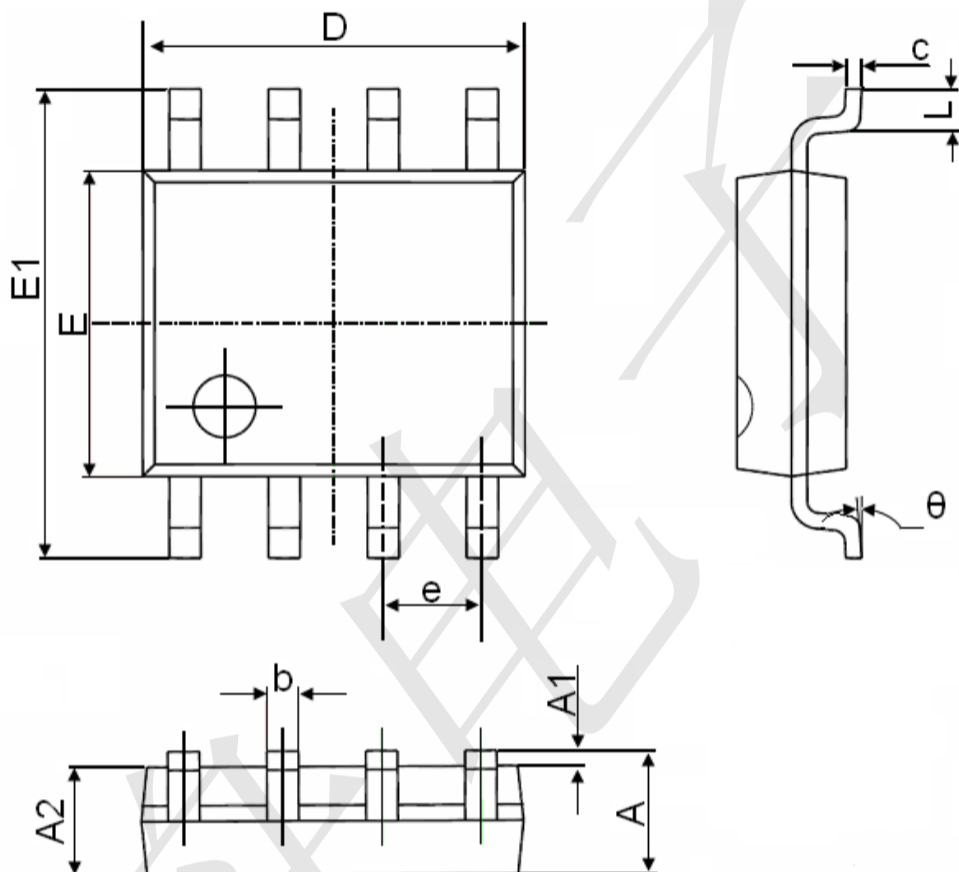
Thermal Characteristics

Parameter	Symbol	Value	Unit
Thermal Resistance from Junction-to-Ambient ³	$R_{\theta JA}$	41.7	$^{\circ}\text{C/W}$

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

Parameter		Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics							
Drain-Source Breakdown Voltage		$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-40	-	-	V
Gate-body Leakage current		I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$	-	-	± 100	nA
Zero Gate Voltage Drain Current	$T_J=25^{\circ}C$	I_{DSS}	$V_{DS} = -40V, V_{GS} = 0V$	-	-	-1	μA
	$T_J=100^{\circ}C$			-	-	-100	
Gate-Threshold Voltage		$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1.0	-1.5	-2.5	V
Drain-Source On-Resistance ⁴		$R_{DS(on)}$	$V_{GS} = -10V, I_D = -5A$	-	35	45	mΩ
			$V_{GS} = -4.5V, I_D = -3A$	-	45	60	
Forward Transconductance ⁴		g_{fs}	$V_{DS} = -10V, I_D = -6A$	-	16	-	S
Dynamic Characteristics ⁵							
Input Capacitance		C_{iss}	$V_{DS} = -20V, V_{GS} = 0V, f = 1MHz$	-	1080	-	pF
Output Capacitance		C_{oss}		-	87	-	
Reverse Transfer Capacitance		C_{rss}		-	77	-	
Gate Resistance		R_g	$f = 1MHz$	-	10.3	-	Ω
Switching Characteristics ⁵							
Total Gate Charge		Q_g	$V_{GS} = -10V, V_{DS} = -20V, I_D = -5A$	-	17	-	nC
Gate-Source Charge		Q_{gs}		-	4.2	-	
Gate-Drain Charge		Q_{gd}		-	3.7	-	
Turn-On Delay Time		$t_{d(on)}$	$V_{GS} = -10V, V_{DD} = -20V, R_G = 3\Omega, I_D = -5A$	-	5.9	-	ns
Rise Time		t_r		-	7.1	-	
Turn-Off Delay Time		$t_{d(off)}$		-	25	-	
Fall Time		t_f		-	8.2	-	
Drain-Source Body Diode Characteristics							
Diode Forward Voltage ⁴		V_{SD}	$I_S = -5A, V_{GS} = 0V$	-	-	-1.2	V
Continuous Source Current	$T_A=25^{\circ}C$	I_S	-	-	-	-6	A

SOP-8 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	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270(BSC)		0.050(BSC)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°