

## P-Channel Enhancement Mode Power MOSFET

### Description

The 9435 uses advanced trench technology to provide excellent  $R_{DS(ON)}$ , low gate charge and operation with gate voltages as low as 4.5V.

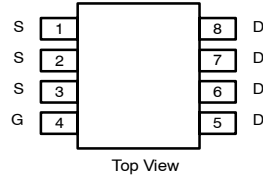
### General Features

- $V_{DS} = -30V$   
 $R_{DS(ON)} < 85m\Omega @ V_{GS} = -4.5V \quad I_D = -4.2A$   
 $R_{DS(ON)} < 57m\Omega @ V_{GS} = -10V \quad I_D = -5.3A$
- High power and current handing capability
- Lead free product is acquired
- Surface mount package

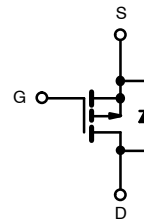
### Application

- Battery Switch
- Load switch
- Power management

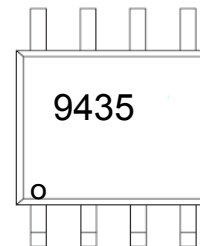
### SOP-8



### Equivalent Circuit



### MARKING



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

Parameter		Symbol	Limit	Unit
Drain-Source Voltage		$V_{DS}$	-30	V
Gate-Source Voltage		$V_{GS}$	$\pm 20$	V
Continuous Drain Current ( $T_J = 150^\circ C$ )	$T_A = 25^\circ C$	$I_D$	-5.3	A
Drain Current-Pulsed (Note 1)		$I_{DM}$	-20	A
Maximum Power Dissipation		$P_D$	2.0	W
Operating Junction and Storage Temperature Range		$T_J, T_{STG}$	-55 To 150	$^\circ C$

### Thermal Characteristic

Thermal Resistance, Junction-to-Ambient (Note 2)	$R_{\theta JA}$	50	$^\circ C/W$
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**Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise noted)**

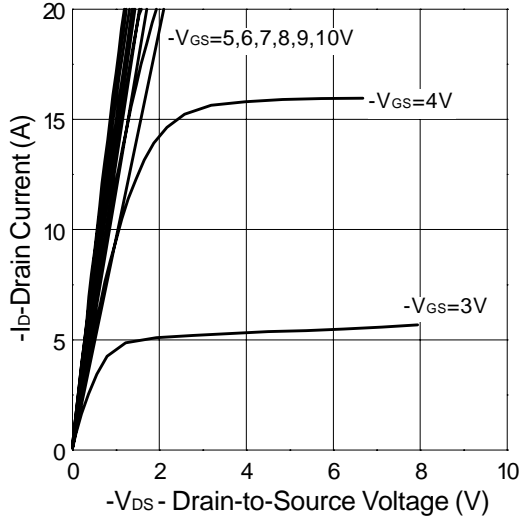
Parameter	Symbol	Condition	Min	Typ	Max	Unit
<b>Off Characteristics</b>						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =-250μA	-30	-33	-	V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-24V, V <sub>GS</sub> =0V	-	-	-1	μA
Gate-Body Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±20V, V <sub>DS</sub> =0V	-	-	±100	nA
<b>On Characteristics</b> (Note 3)						
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =-250μA	-1	-1.5	-3.0	V
Drain-Source On-State Resistance	R <sub>DS(ON)</sub>	V <sub>GS</sub> =-10V, I <sub>D</sub> =-5.3A	-	51	57	mΩ
		V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-4.2A	-	75	85	mΩ
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> =-15V, I <sub>D</sub> =-5.3A	10	-	-	S
<b>Dynamic Characteristics</b> (Note 4)						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-15V, V <sub>GS</sub> =0V, F=1.0MHz	-	845	-	PF
Output Capacitance	C <sub>oss</sub>		-	120	-	PF
Reverse Transfer Capacitance	C <sub>rss</sub>		-	80	-	PF
<b>Switching Characteristics</b> (Note 4)						
Turn-on Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> =-25V, I <sub>D</sub> =-2A, V <sub>GS</sub> =-10V, R <sub>GEN</sub> =6Ω R <sub>L</sub> =12.5Ω	-	17	-	nS
Turn-on Rise Time	t <sub>r</sub>		-	18	-	nS
Turn-Off Delay Time	t <sub>d(off)</sub>		-	60	-	nS
Turn-Off Fall Time	t <sub>f</sub>		-	27	-	nS
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =-15V, I <sub>D</sub> =-4.6A V <sub>GS</sub> =-10V	-	22	-	nC
Gate-Source Charge	Q <sub>gs</sub>		-	4.5	-	nC
Gate-Drain Charge	Q <sub>gd</sub>		-	2	-	nC
<b>Drain-Source Diode Characteristics</b>						
Diode Forward Voltage	V <sub>SD</sub>	V <sub>GS</sub> =0V, I <sub>S</sub> =-2.0A	-	-	-1.2	V

**Notes:**

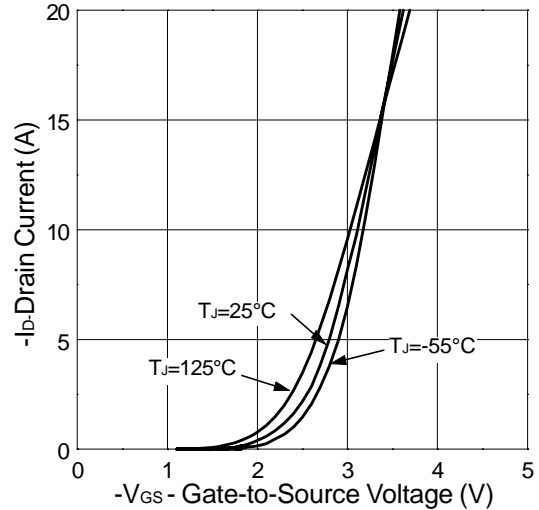
1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t ≤ 10 sec.
3. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
4. Guaranteed by design, not subject to production

## Typical Characteristics

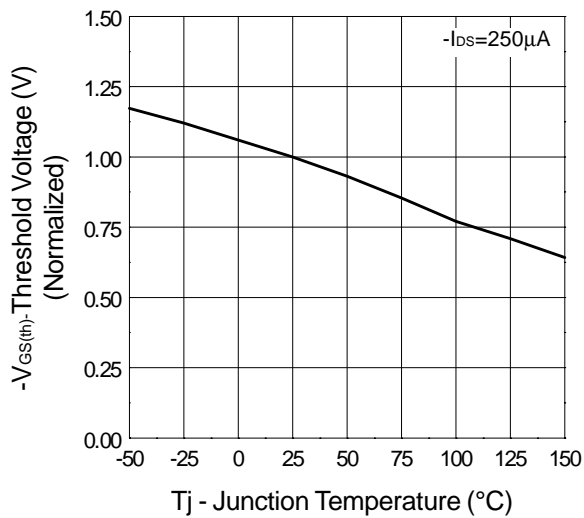
Output Characteristics



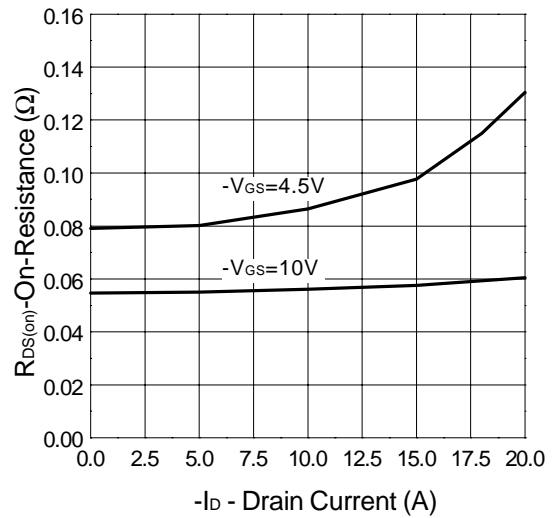
Transfer Characteristics



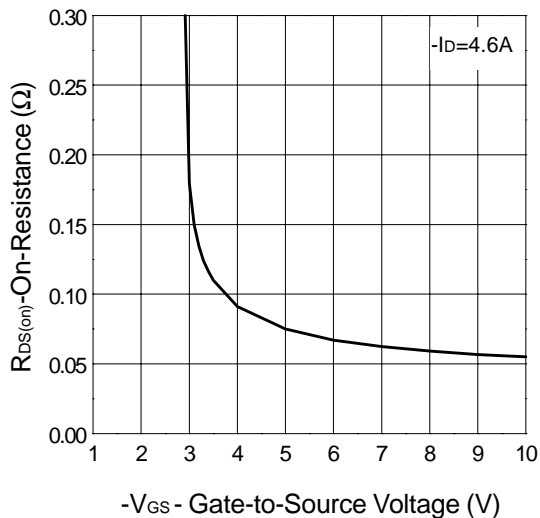
Threshold Voltage vs. Junction Temperature



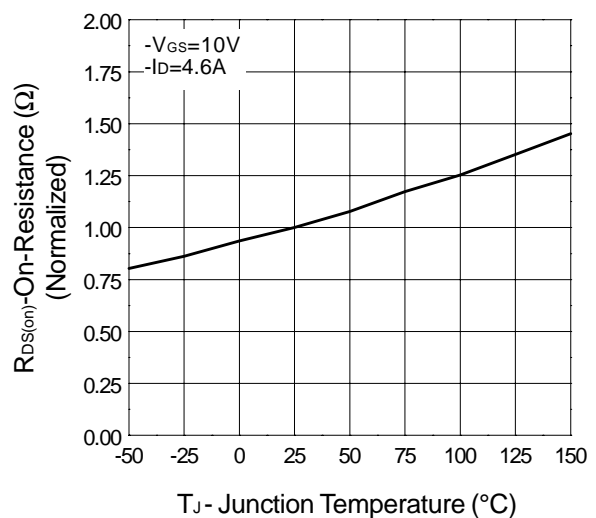
On-Resistance vs. Drain Current



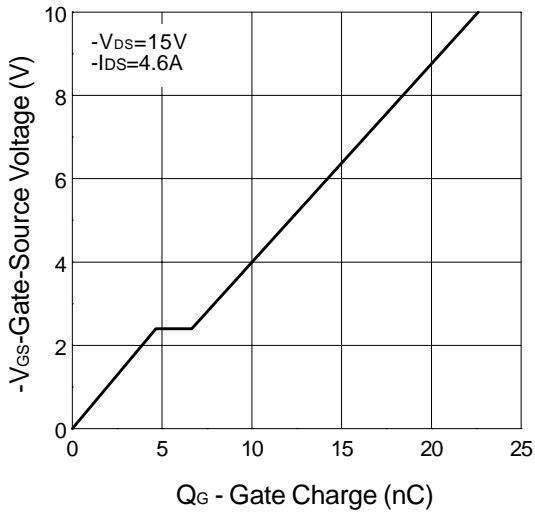
On-Resistance vs. Gate-to-Source Voltage



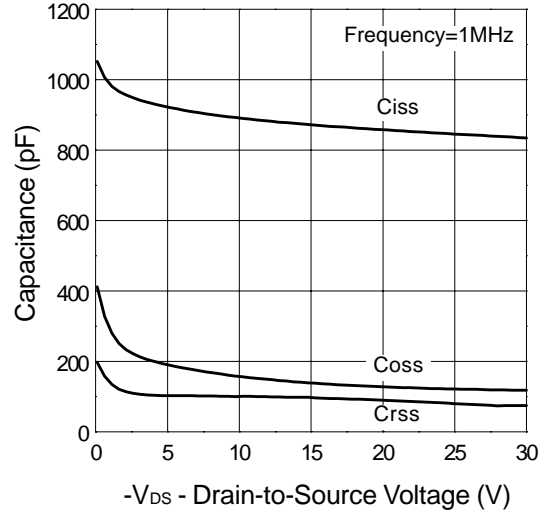
On-Resistance vs. Junction Temperature



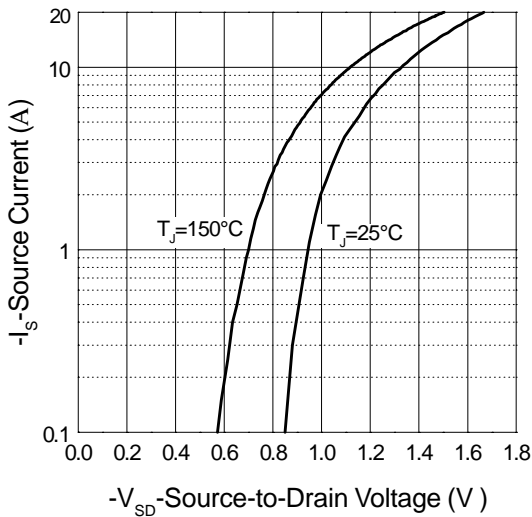
Gate Charge



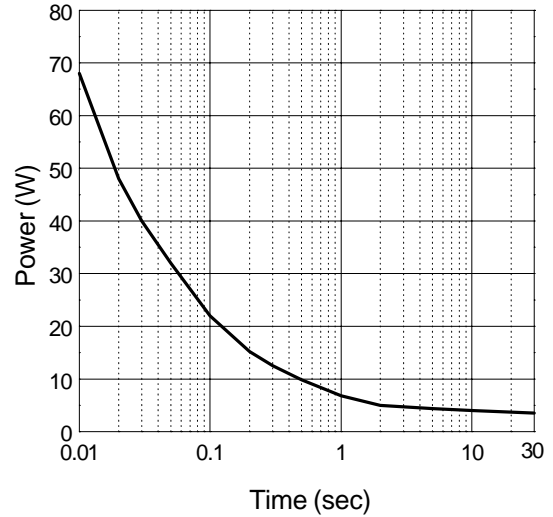
Capacitance



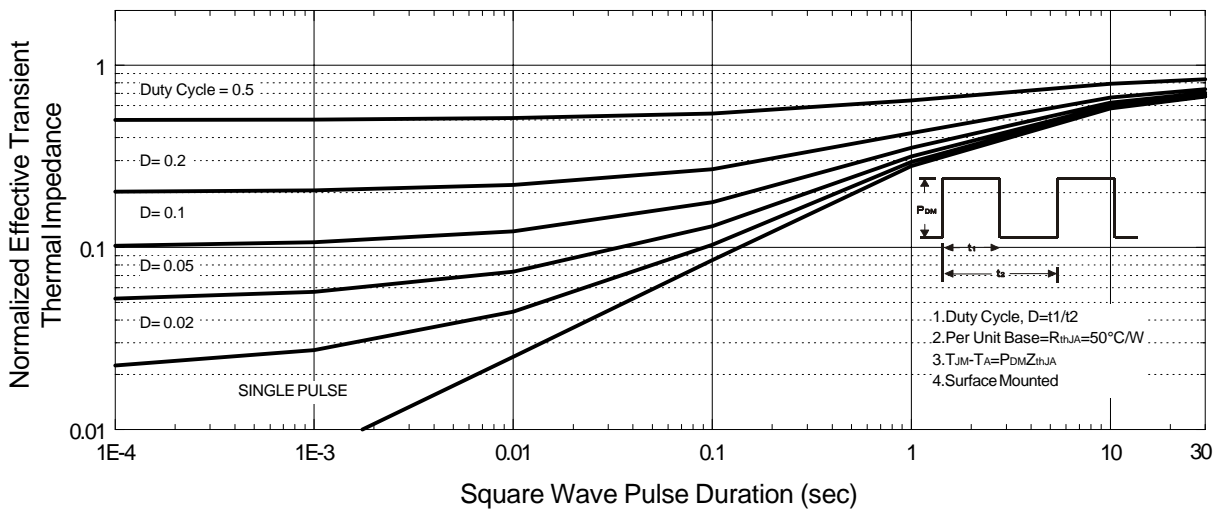
Source-Drain Diode Forward Voltage



Single Pulse Power

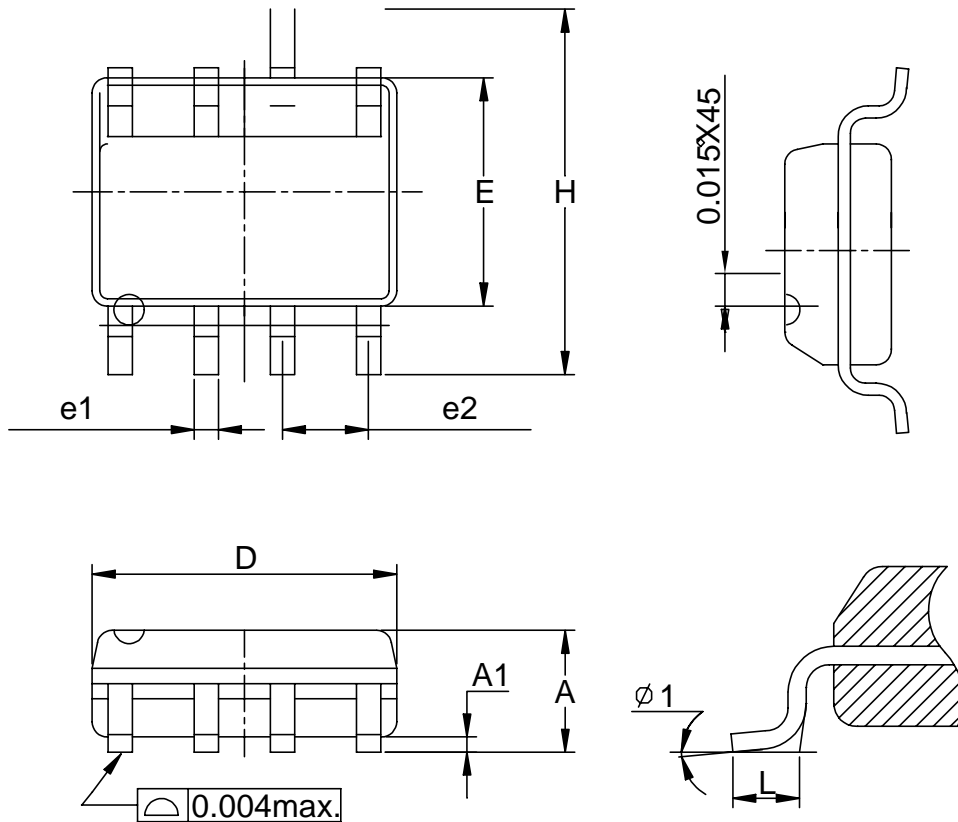


Normalized Thermal Transient Impedance, Junction to Ambient



## Packaging Information

SOP-8 (Reference JEDEC Registration MS-012)



Dim	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.35	1.75	0.053	0.069
A1	0.10	0.25	0.004	0.010
D	4.80	5.00	0.189	0.197
E	3.80	4.00	0.150	0.157
H	5.80	6.20	0.228	0.244
L	0.40	1.27	0.016	0.050
e1	0.33	0.51	0.013	0.020
e2	1.27BSC		0.50BSC	
phi 1	8°		8°	

单击下面可查看定价，库存，交付和生命周期等信息

[>>KUU\(永裕泰\)](#)