



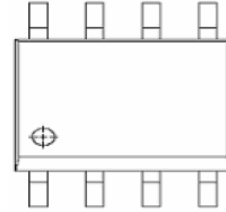
### Features

- -30V/-5.3A ,  
 $R_{DS(ON)}=65m\Omega(\text{typ.}) @ V_{GS}=-10V$   
 $R_{DS(ON)}=100m\Omega(\text{typ.}) @ V_{GS}=-4.5V$
- Super High Dense Cell Design
- Reliable and Rugged
- Lead Free Available (RoHS Compliant)

### Applications

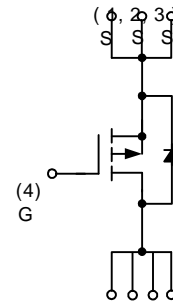
- Power Management in Notebook Computer, Portable Equipment and Battery Powered Systems ; LCD-TV ; LCD-monitor ; Net-card

### Pin Description



1	2	3	4
S	S	S	G

Top View of SOP – 8



D	D	D
(5,6,7,8)		

P-Channel MOSFET



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

Symbol	Parameter	Rating	Unit	
$V_{DSS}$	Drain-Source Voltage	-30	V	
$V_{GSS}$	Gate-Source Voltage	$\pm 25$		
$I_D^*$	Continuous Drain Current	$V_{GS} = -10\text{V}$ -5.3	A	
$I_{DM}^*$	Pulsed Drain Current			-20
$I_S^*$	Diode Continuous Forward Current	-2	A	
$T_J$	Maximum Junction Temperature	150	$^\circ\text{C}$	
$T_{STG}$	Storage Temperature Range	-55 to 150		
$P_D^*$	Maximum Power Dissipation	$T_A = 25^\circ\text{C}$	2	W
		$T_A = 100^\circ\text{C}$	0.8	
$R_{\theta JA}^*$	Thermal Resistance-Junction to Ambient	62.5	$^\circ\text{C/W}$	

Note:

\*Surface Mounted on  $1\text{in}^2$  pad area,  $t \leq 10\text{sec}$ .

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

Symbol	Parameter	Test Condition	AMS9435A			Unit
			Min.	Typ.	Max.	
<b>Static Characteristics</b>						
$BV_{DSS}$	Drain-Source Breakdown Voltage	$V_{GS} = 0\text{V}, I_{DS} = -250\mu\text{A}$	-30			V
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{DS} = -24\text{V}, V_{GS} = 0\text{V}$ $T_A = 25^\circ\text{C}$			-1	$\mu\text{A}$
					-30	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_{DS} = -250\mu\text{A}$	-1	-1.5	-2	V
$I_{GSS}$	Gate Leakage Current	$V_{GS} = \pm 25\text{V}, V_{DS} = 0\text{V}$			$\pm 100$	nA
$R_{DS(ON)}^a$	Drain-Source On-state Resistance	$V_{GS} = -10\text{V}, I_{DS} = -4.6\text{A}$			65	m $\Omega$
		$V_{GS} = -4.5\text{V}, I_{DS} = -2\text{A}$			100	
$V_{SD}^a$	Diode Forward Voltage	$I_{SD} = -2\text{A}, V_{GS} = 0\text{V}$		-0.9	-1.3	V
<b>Gate Charge Characteristics<sup>b</sup></b>						
$Q_g$	Total Gate Charge	$V_{DS} = -15\text{V}, V_{GS} = -10\text{V},$ $I_{DS} = -5\text{A}$		27	32	nC
$Q_{gs}$	Gate-Source Charge			4		
$Q_{gd}$	Gate-Drain Charge			6.5		



## Electrical Characteristics (Cont.) (T<sub>A</sub> = 25°C unless otherwise noted)

Symbol	Parameter	Test Condition	AMS9435A			Unit
			Min.	Typ.	Max.	
<b>Dynamic Characteristics<sup>b</sup></b>						
C <sub>iss</sub>	Input Capacitance	V <sub>GS</sub> =0V, V <sub>DS</sub> =-15V, Frequency=1.0MHz		545		pF
C <sub>oss</sub>	Output Capacitance			85		
C <sub>rss</sub>	Reverse Transfer Capacitance			55		
t <sub>d(ON)</sub>	Turn-on Delay Time	V <sub>DD</sub> =-15V, R <sub>L</sub> =15Ω, I <sub>DS</sub> =-1A, V <sub>GEN</sub> =-10V, R <sub>G</sub> =6Ω			12	ns
T <sub>r</sub>	Turn-on Rise Time			8	15	
t <sub>d(OFF)</sub>	Turn-off Delay Time			25	46	
T <sub>f</sub>	Turn-off Fall Time			5	10	
t <sub>rr</sub>	Reverse Recovery Time	I <sub>DS</sub> =-4.6A, dI <sub>SD</sub> /dt=100A/μs		56		ns
Q <sub>rr</sub>	Reverse Recovery Charge			30		nC

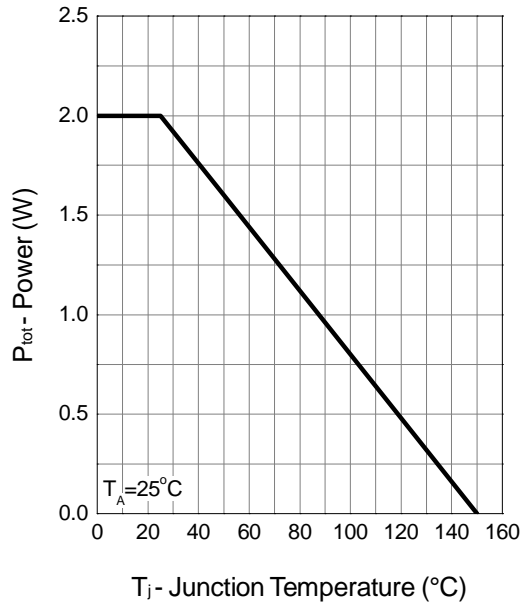
Notes:

- a : Pulse test ; pulse width≤300μs, duty cycle≤2%.
- b : Guaranteed by design, not subject to production testing.

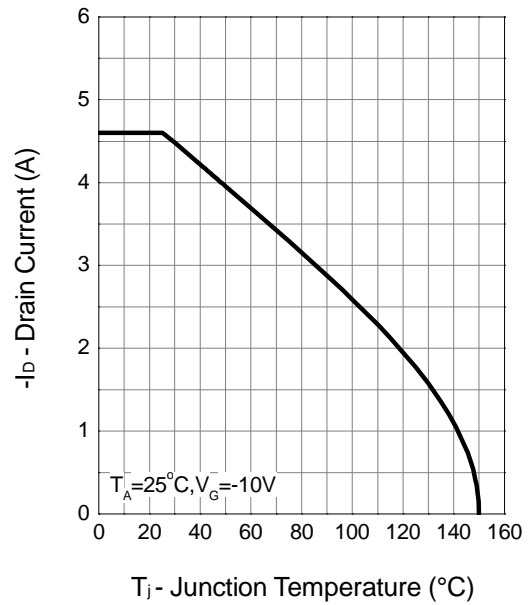


## Typical Characteristics

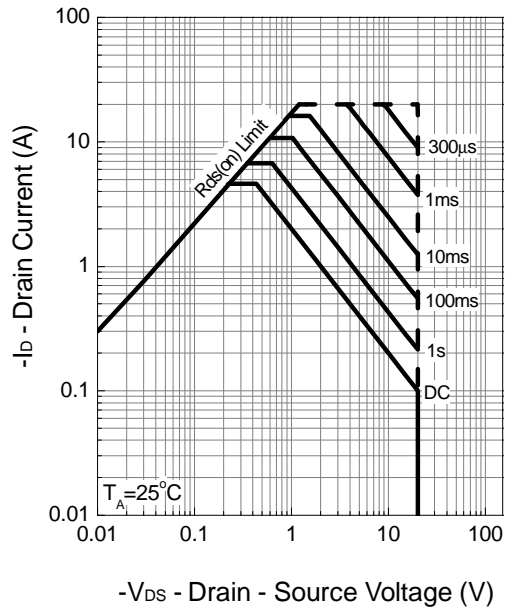
### Power Dissipation



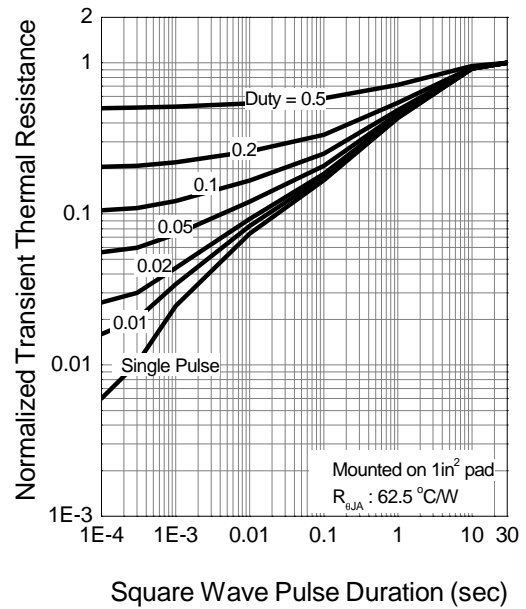
### Drain Current



### Safe Operation Area



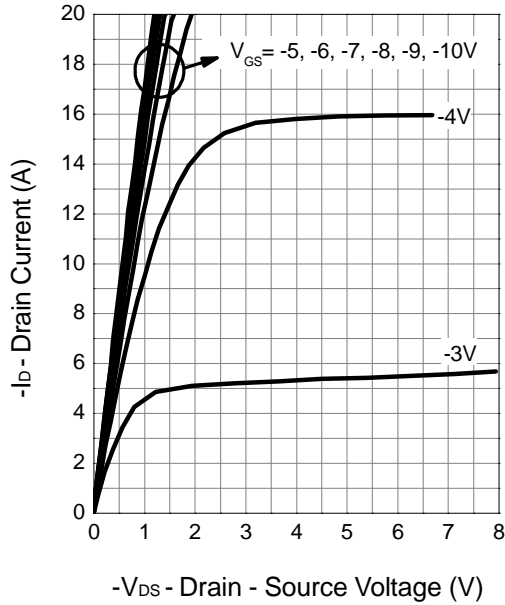
### Thermal Transient Impedance



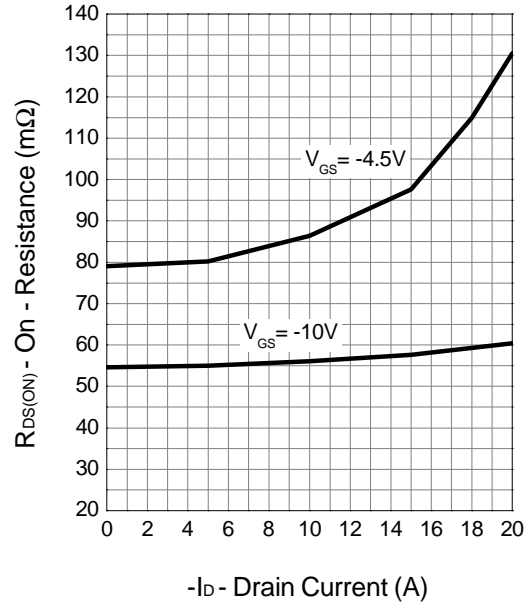


## Typical Characteristics (Cont.)

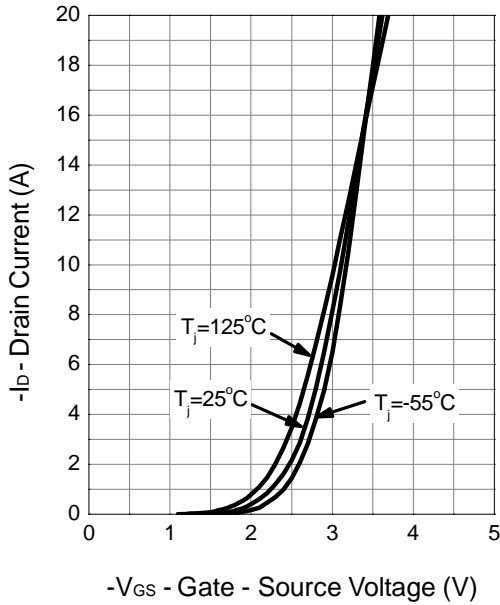
### Output Characteristics



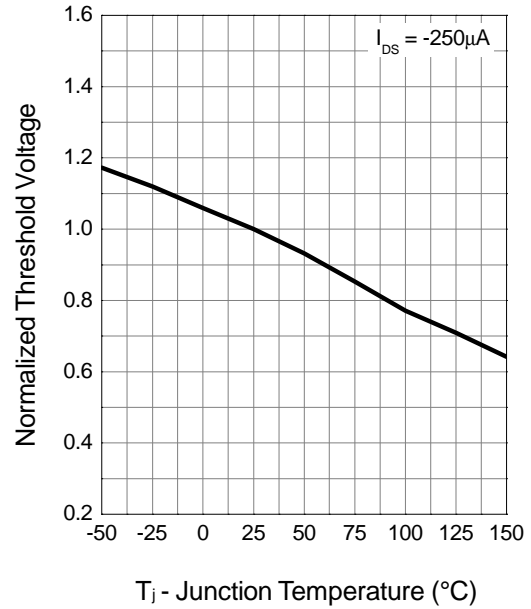
### Drain-Source On Resistance



### Transfer Characteristics



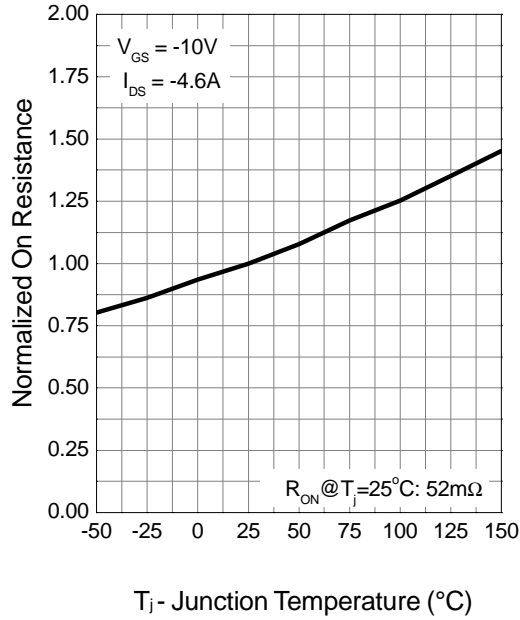
### Gate Threshold Voltage



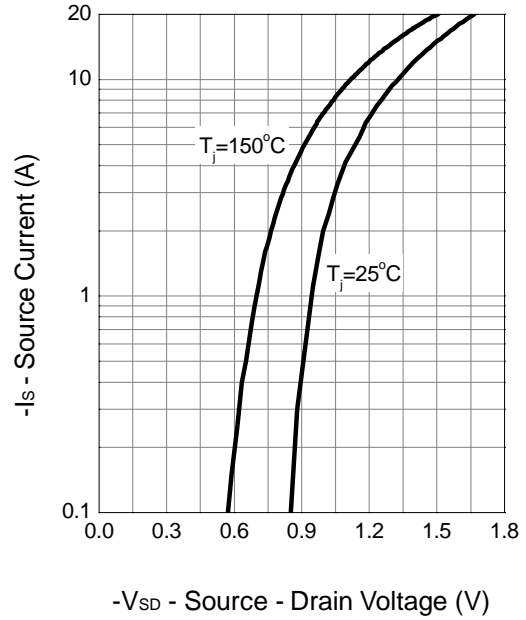


## Typical Characteristics (Cont.)

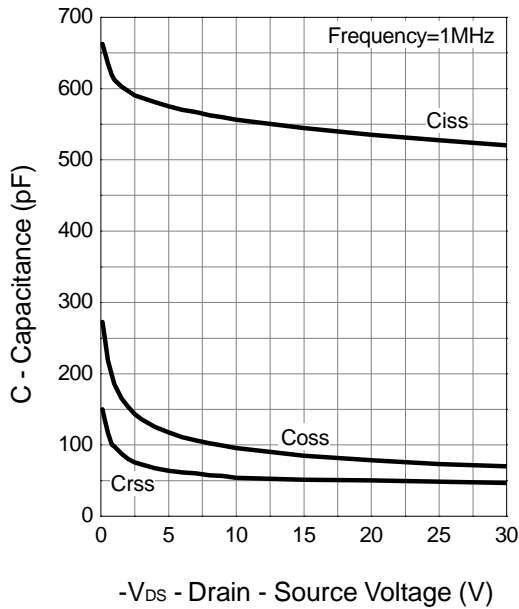
### Drain-Source On Resistance



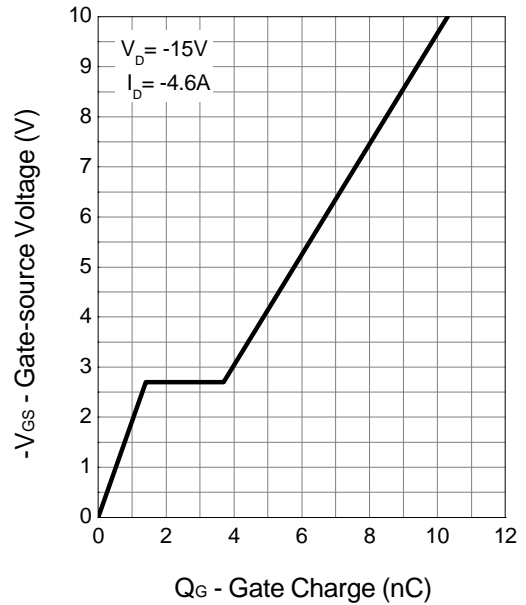
### Source-Drain Diode Forward



### Capacitance



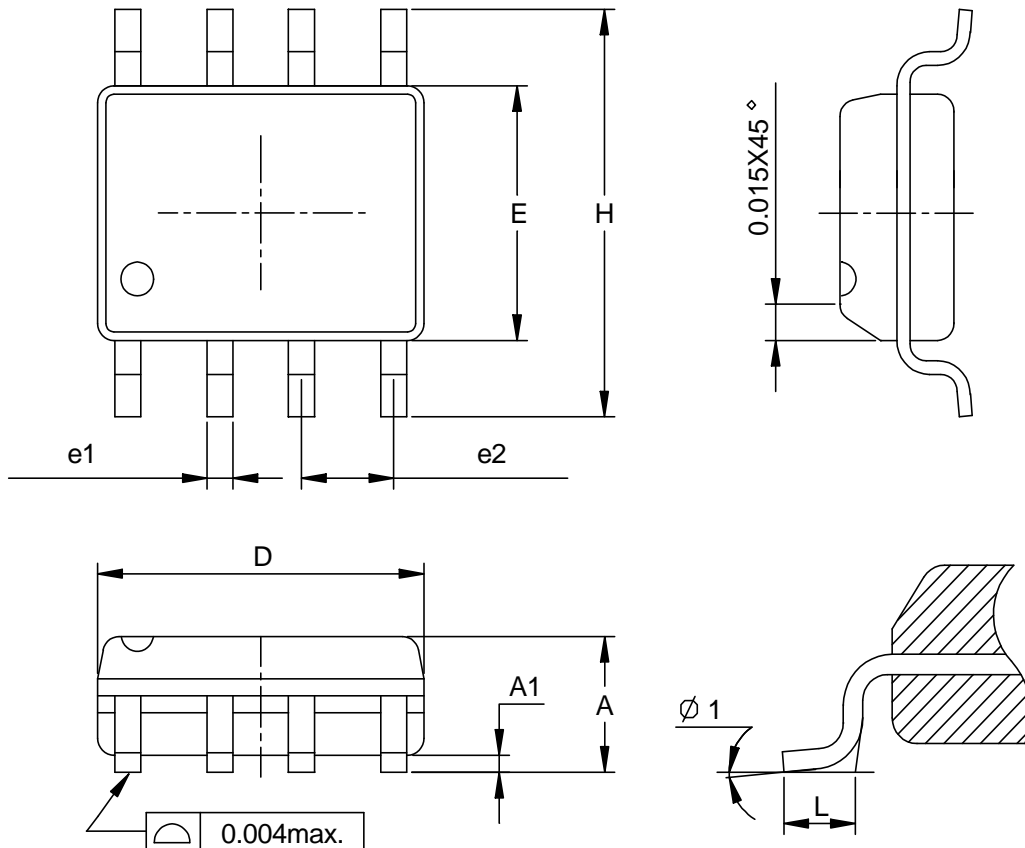
### Gate Charge





## Packaging Information

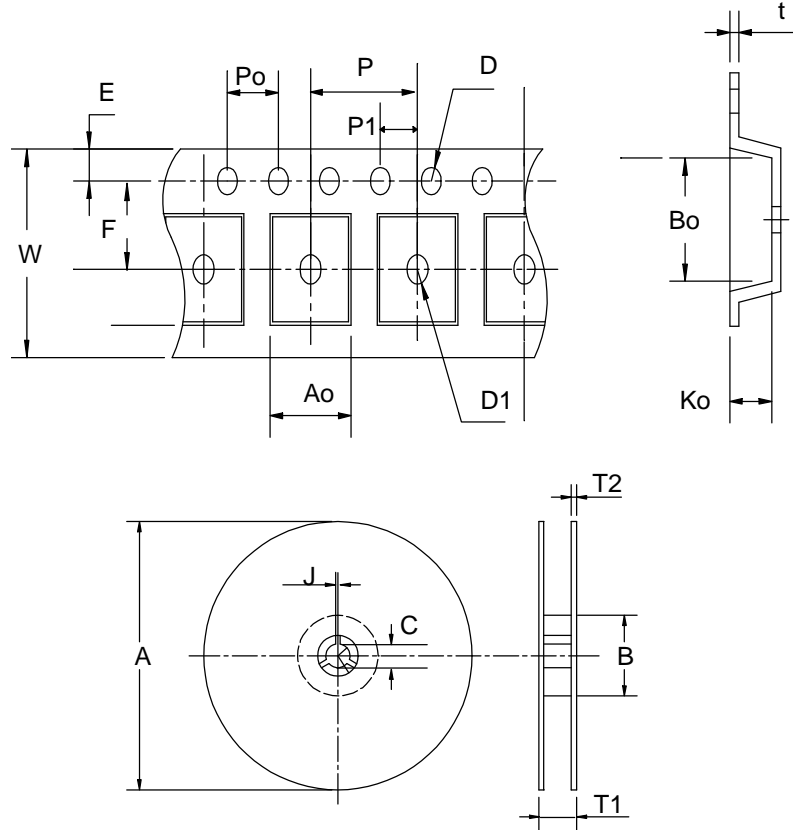
SOP-8 pin (Reference JEDEC Registration MS-012)



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	
φ 1	0°	8°	0°	8°



## Carrier Tape & Reel Dimensions



Application	A	B	C	J	T1	T2	W	P	E
SOP-8	330±1	62 ± 1.5	12.75 + 0.15	2 + 0.5	12.4 +0.2	2± 0.2	12 + 0.3 - 0.1	8± 0.1	1.75± 0.1
	F	D	D1	Po	P1	Ao	Bo	Ko	t
	5.5 ± 0.1	1.55±0.1	1.55+ 0.25	4.0 ± 0.1	2.0 ± 0.1	6.4 ± 0.1	5.2± 0.1	2.1± 0.1	0.3±0.013

(mm)

## Cover Tape Dimensions

Application	Carrier Width	Cover Tape Width	Devices Per Reel
SOP- 8	12	9.3	2500