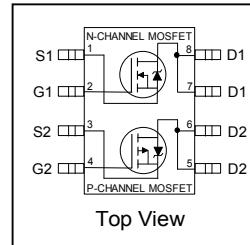


**Features**

- Advanced Planar Technology
- Ultra Low On-Resistance
- Logic Level Gate Drive
- Dual N and P Channel MOSFET
- Surface Mount
- Available in Tape & Reel
- 150°C Operating Temperature
- Lead-Free, RoHS Compliant
- Automotive Qualified \*



	N-CH	P-CH
$V_{DSS}$	55V	-55V
$R_{DS(on)}$ typ.	0.043Ω	0.095Ω
max.	0.050Ω	0.105Ω
$I_D$	4.7A	-3.4A



G	D	S
Gate	Drain	Source

**Description**

Specifically designed for Automotive applications, these HEXFET® Power MOSFET's in a Dual SO-8 package utilize the lastest processing techniques to achieve extremely low on-resistance per silicon area. Additional features of these Automotive qualified HEXFET Power MOSFET's are a 150°C junction operating temperature, fast switching speed and improved repetitive avalanche rating. These benefits combine to make this design an extremely efficient and reliable device for use in Automotive applications and a wide variety of other applications.

The efficient SO-8 package provides enhanced thermal characteristics and dual MOSFET die capability making it ideal in a variety of power applications. This dual, surface mount SO-8 can dramatically reduce board space and is also available in Tape & Reel.

Base part number	Package Type	Standard Pack		Orderable Part Number
		Form	Quantity	
AUIRF7343Q	SO-8	Tape and Reel	4000	AUIRF7343QTR

**Absolute Maximum Ratings**

Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only; and functional operation of the device at these or any other condition beyond those indicated in the specifications is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability. The thermal resistance and power dissipation ratings are measured under board mounted and still air conditions. Ambient temperature (TA) is 25°C, unless otherwise specified.

Symbol	Parameter	Max.		Units	
		N-Channel	P-Channel		
$V_{DS}$	Drain-Source Voltage	55	-55	V	
$I_D @ T_A = 25^\circ C$	Continuous Drain Current, $V_{GS} @ 10V$	4.7	-3.4	A	
$I_D @ T_A = 70^\circ C$	Continuous Drain Current, $V_{GS} @ 10V$	3.8	-2.7		
$I_{DM}$	Pulsed Drain Current ①	38	-27	W	
$P_D @ T_A = 25^\circ C$	Maximum Power Dissipation ⑤	2.0			
$P_D @ T_A = 70^\circ C$	Maximum Power Dissipation ⑤	1.3			
$E_{AS}$	Single Pulse Avalanche Energy (Thermally Limited) ③	72	114	mJ	
$I_{AR}$	Avalanche Current	4.7	-3.4	A	
$E_{AR}$	Repetitive Avalanche Energy	0.20		mJ	
$V_{GS}$	Gate-to-Source Voltage	$\pm 20$		V	
$dv/dt$	Peak Diode Recovery $dv/dt$ ②	5.0	-5.0	V/ns	
$T_J$ $T_{STG}$	Operating Junction and Storage Temperature Range	-55 to + 150		°C	

**Thermal Resistance**

Symbol	Parameter	Typ.	Max.	Units
$R_{\theta JA}$	Junction-to-Ambient ( PCB Mount, steady state) ⑤	—	62.5	°C/W

HEXFET® is a registered trademark of Infineon.

\*Qualification standards can be found at [www.infineon.com](http://www.infineon.com)

**Static @  $T_J = 25^\circ\text{C}$  (unless otherwise specified)**

	Parameter		Min.	Typ.	Max.	Units	Conditions
$V_{(\text{BR})\text{DSS}}$	Drain-to-Source Breakdown Voltage	N-Ch	55	—	—	V	$V_{GS} = 0\text{V}, I_D = 250\mu\text{A}$
		P-Ch	-55	—	—		$V_{GS} = 0\text{V}, I_D = -250\mu\text{A}$
$\Delta V_{(\text{BR})\text{DSS}}/\Delta T_J$	Breakdown Voltage Temp. Coefficient	N-Ch	—	0.059	—	V/ $^\circ\text{C}$	Reference to $25^\circ\text{C}, I_D = 1\text{mA}$
		P-Ch	—	0.054	—		Reference to $25^\circ\text{C}, I_D = -1\text{mA}$
$R_{DS(\text{on})}$	Static Drain-to-Source On-Resistance	N-Ch	—	0.043	0.050	$\Omega$	$V_{GS} = 10\text{V}, I_D = 4.7\text{A}$ ④
		—	—	0.056	0.065		$V_{GS} = 4.5\text{V}, I_D = 3.8\text{A}$ ④
		P-Ch	—	0.095	0.105		$V_{GS} = -10\text{V}, I_D = -3.4\text{A}$ ⑤
		—	—	0.150	0.170		$V_{GS} = -4.5\text{V}, I_D = -2.7\text{A}$ ④
$V_{GS(\text{th})}$	Gate Threshold Voltage	N-Ch	1.0	—	—	V	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$
		P-Ch	-1.0	—	—		$V_{DS} = V_{GS}, I_D = -250\mu\text{A}$
$g_{fs}$	Forward Trans conductance	N-Ch	7.9	—	—	S	$V_{DS} = 10\text{V}, I_D = 4.5\text{A}$ ④
		P-Ch	3.3	—	—		$V_{DS} = -10\text{V}, I_D = -3.1\text{A}$ ④
$I_{DSS}$	Drain-to-Source Leakage Current	N-Ch	—	—	2.0	$\mu\text{A}$	$V_{DS} = 55\text{V}, V_{GS} = 0\text{V}$
		P-Ch	—	—	-2.0		$V_{DS} = -55\text{V}, V_{GS} = 0\text{V}$
		N-Ch	—	—	25		$V_{DS} = 55\text{V}, V_{GS} = 0\text{V}, T_J = 55^\circ\text{C}$
		P-Ch	—	—	-25		$V_{DS} = -55\text{V}, V_{GS} = 0\text{V}, T_J = 55^\circ\text{C}$
$I_{GSS}$	Gate-to-Source Forward Leakage	N-P	—	—	$\pm 100$	nA	$V_{GS} = \pm 20\text{V}$
	Gate-to-Source Reverse Leakage	N-P	—	—	$\pm 100$		$V_{GS} = \pm 20\text{V}$

**Dynamic Electrical Characteristics @  $T_J = 25^\circ\text{C}$  (unless otherwise specified)**

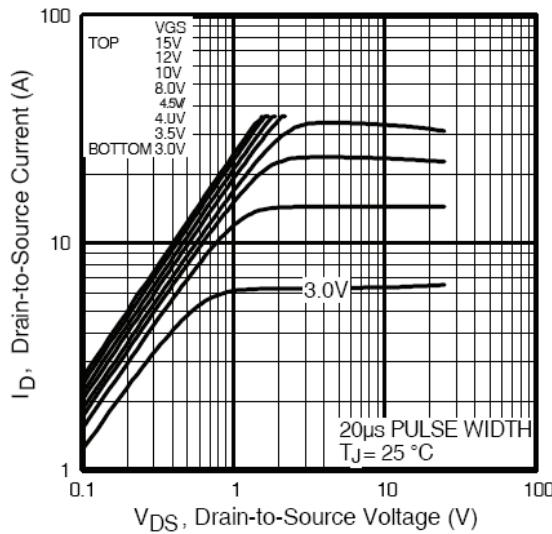
$Q_g$	Total Gate Charge	N-Ch	—	24	36	nC	N-Channel $I_D = 4.5\text{A}, V_{DS} = 44\text{V}, V_{GS} = 10\text{V}$ ④
		P-Ch	—	26	38		P-Channel $I_D = -3.1\text{A}, V_{DS} = -44\text{V}, V_{GS} = -10\text{V}$
$Q_{gs}$	Gate-to-Source Charge	N-Ch	—	2.3	3.4		
		P-Ch	—	3.0	4.5		
$Q_{gd}$	Gate-to-Drain Charge	N-Ch	—	7.0	10		
		P-Ch	—	8.4	13		
$t_{d(on)}$	Turn-On Delay Time	N-Ch	—	8.3	12	ns	N-Channel $V_{DD} = 28\text{V}, I_D = 1.0\text{A}, R_G = 6.0\Omega, R_D = 28\Omega$ ④
		P-Ch	—	14	22		
$t_r$	Rise Time	N-Ch	—	3.2	4.8		
		P-Ch	—	10	15		
$t_{d(off)}$	Turn-Off Delay Time	N-Ch	—	32	48		P-Channel $V_{DD} = -28\text{V}, I_D = -1.0\text{A}, R_G = 6.0\Omega, R_D = 28\Omega$
		P-Ch	—	43	64		
$t_f$	Fall Time	N-Ch	—	13	20		
		P-Ch	—	22	32		
$C_{iss}$	Input Capacitance	N-Ch	—	740	—	pF	N-Channel $V_{GS} = 0\text{V}, V_{DS} = 25\text{V}, f = 1.0\text{MHz}$
		P-Ch	—	690	—		
$C_{oss}$	Output Capacitance	N-Ch	—	190	—		P-Channel $V_{GS} = 0\text{V}, V_{DS} = -25\text{V}, f = 1.0\text{MHz}$
		P-Ch	—	210	—		
$C_{rss}$	Reverse Transfer Capacitance	N-Ch	—	71	—		
		P-Ch	—	86	—		

**Diode Characteristics**

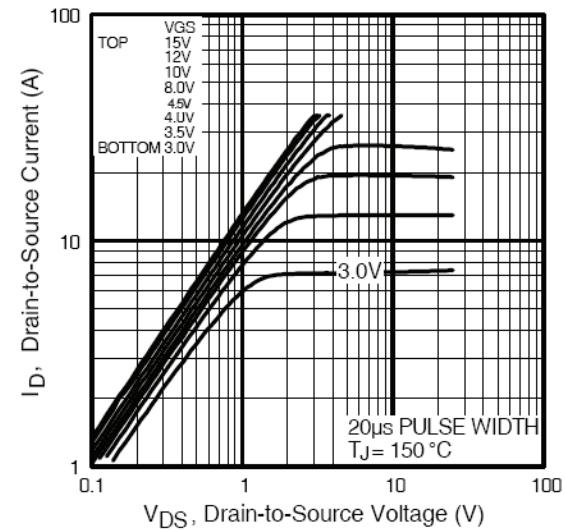
	Parameter		Min.	Typ.	Max.	Units	Conditions
$I_s$	Continuous Source Current (Body Diode)	N-Ch	—	—	2.0	A	
		P-Ch	—	—	-2.0		
$I_{SM}$	Pulsed Source Current (Body Diode) ①	N-Ch	—	—	38		
		P-Ch	—	—	-27		
$V_{SD}$	Diode Forward Voltage	N-Ch	—	0.70	1.2	V	$T_J = 25^\circ\text{C}, I_S = 2.0\text{A}, V_{GS} = 0\text{V}$ ④
		P-Ch	—	-0.80	-1.2		$T_J = 25^\circ\text{C}, I_S = -2.0\text{A}, V_{GS} = 0\text{V}$ ④
$t_{rr}$	Reverse Recovery Time	N-Ch	—	60	90	ns	N-Channel $T_J = 25^\circ\text{C}, I_F = 2.0\text{A}, di/dt = 100\text{A}/\mu\text{s}$
		P-Ch	—	54	80		P-Channel $T_J = 25^\circ\text{C}, I_F = -2.0\text{A}, di/dt = 100\text{A}/\mu\text{s}$ ④
$Q_{rr}$	Reverse Recovery Charge	N-Ch	—	120	170	nC	
		P-Ch	—	85	130		

**Notes:**

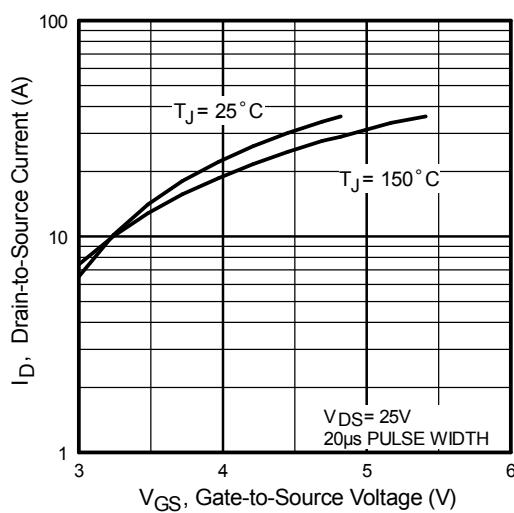
- ① Repetitive rating; pulse width limited by max. junction temperature. (See Fig. 22)
- ② N-Channel  $I_{SD} \leq 4.7\text{A}$ ,  $di/dt \leq 220\text{A}/\mu\text{s}$ ,  $V_{DD} \leq V_{(\text{BR})\text{DSS}}$ ,  $T_J \leq 150^\circ\text{C}$ .  
P-Channel  $I_{SD} \leq -3.4\text{A}$ ,  $di/dt \leq -150\text{A}/\mu\text{s}$ ,  $V_{DD} \leq V_{(\text{BR})\text{DSS}}$ ,  $T_J \leq 150^\circ\text{C}$
- ③ N-Channel Starting  $T_J = 25^\circ\text{C}$ ,  $L = 6.5\text{mH}$ ,  $R_G = 25\Omega$ ,  $I_{AS} = 4.7\text{A}$ .  
P-Channel Starting  $T_J = 25^\circ\text{C}$ ,  $L = 20\text{mH}$ ,  $R_G = 25\Omega$ ,  $I_{AS} = -3.4\text{A}$ .
- ④ Pulse width  $\leq 300\mu\text{s}$ ; duty cycle  $\leq 2\%$ .
- ⑤ Surface mounted on FR-4 board,  $t \leq 10\text{sec}$ .



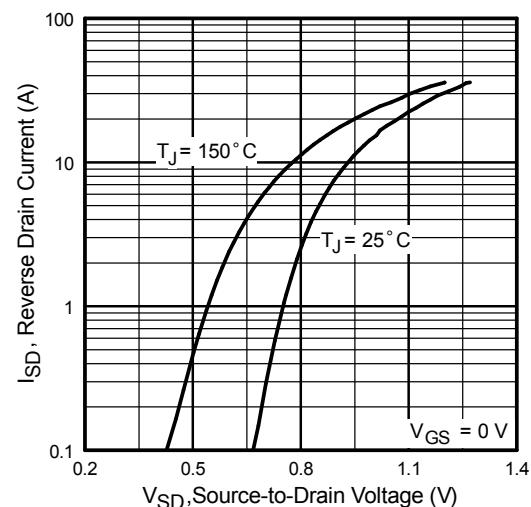
**Fig. 1** Typical Output Characteristics



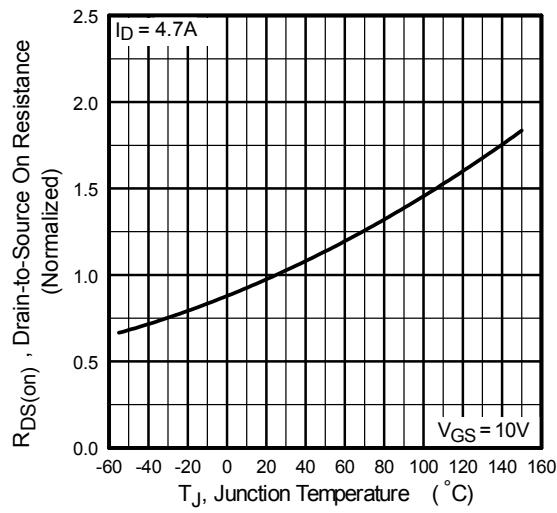
**Fig. 2** Typical Output Characteristics



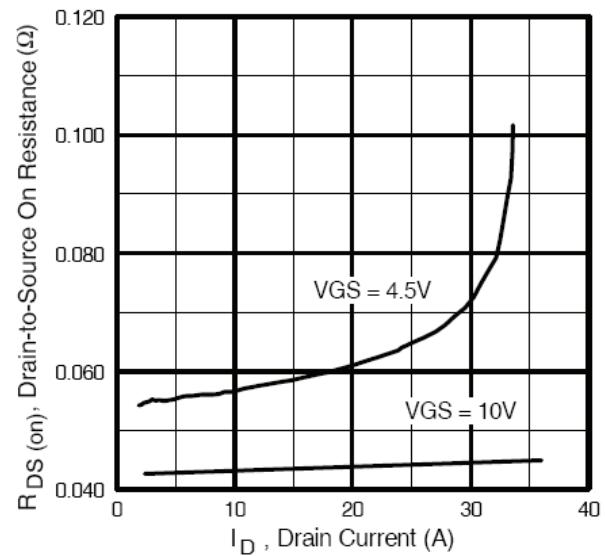
**Fig. 3** Typical Transfer Characteristics



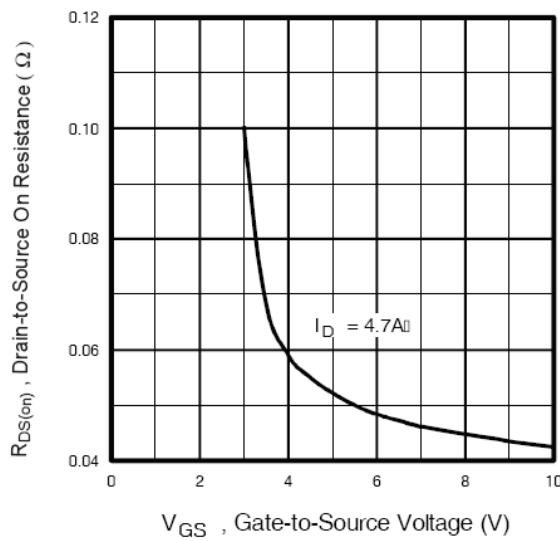
**Fig. 4** Typical Source-Drain Diode Forward Voltage



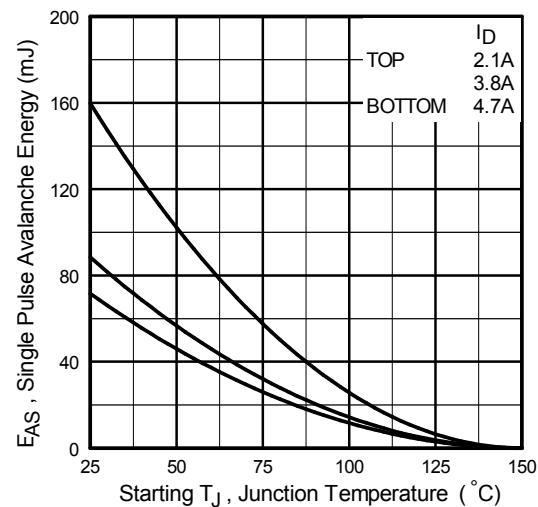
**Fig 5.** Normalized On-Resistance Vs. Temperature



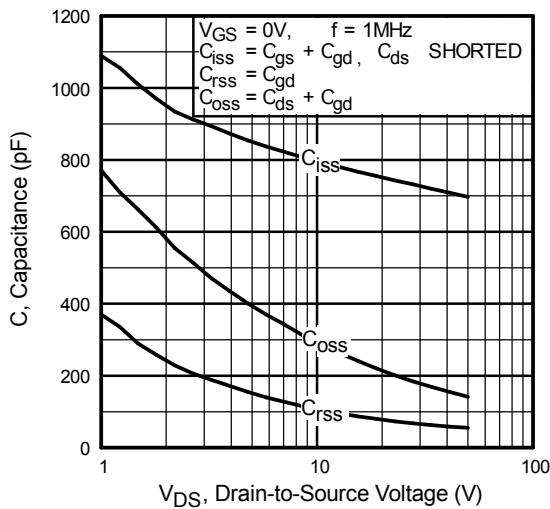
**Fig 6.** Typical On-Resistance Vs. Drain Current



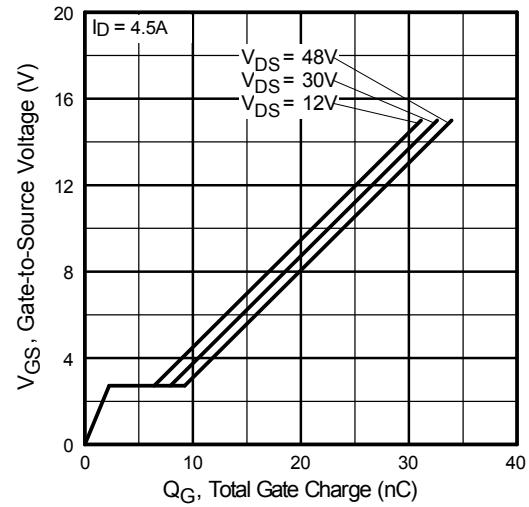
**Fig 7** Typical On-Resistance Vs. Gate Voltage



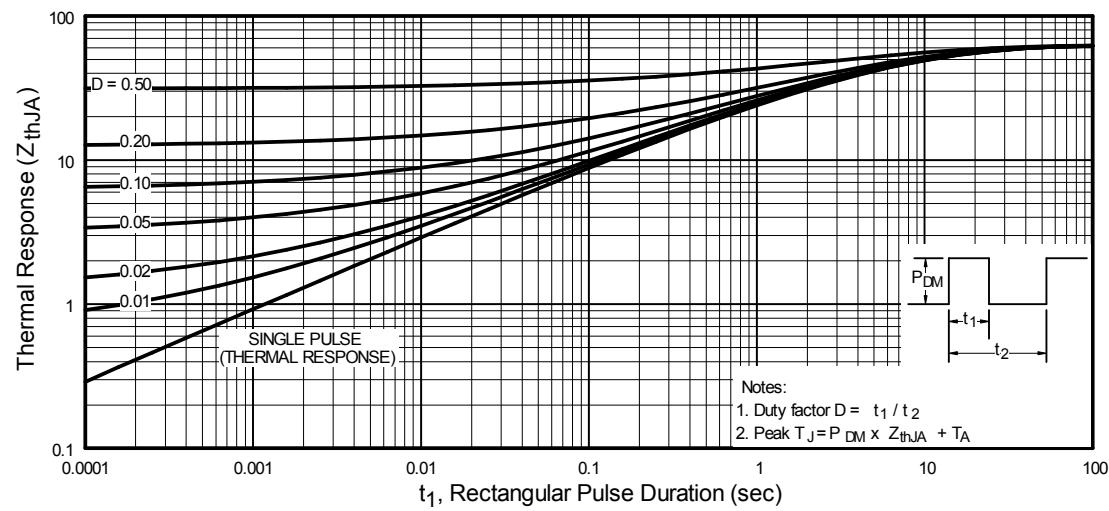
**Fig 8.** Maximum Avalanche Energy Vs. Drain Current



**Fig 9.** Typical Capacitance Vs.  
Drain-to-Source Voltage



**Fig 10.** Typical Gate Charge Vs.  
Gate-to-Source Voltage



**Fig 11.** Maximum Effective Transient Thermal Impedance, Junction-to-Ambient

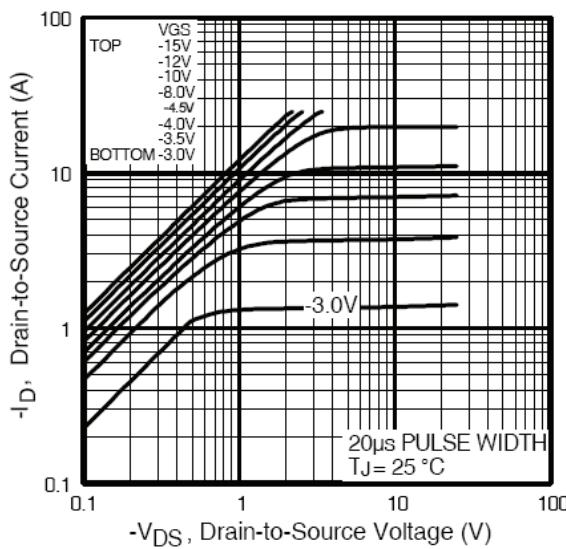


Fig. 12 Typical Output Characteristics

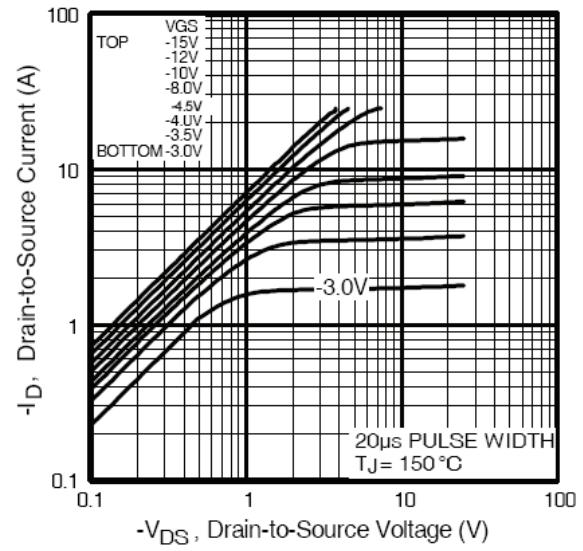


Fig. 13 Typical Output Characteristics

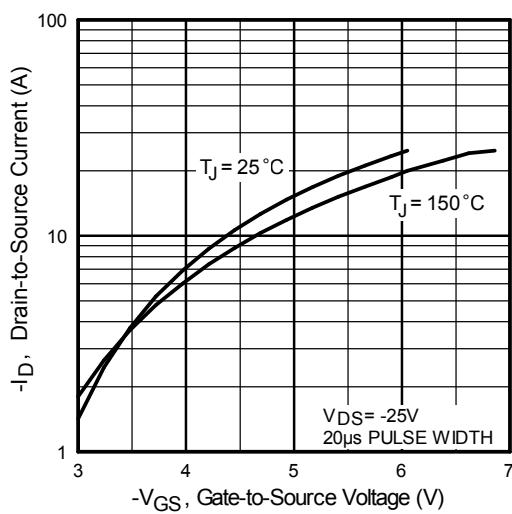


Fig. 14 Typical Transfer Characteristics

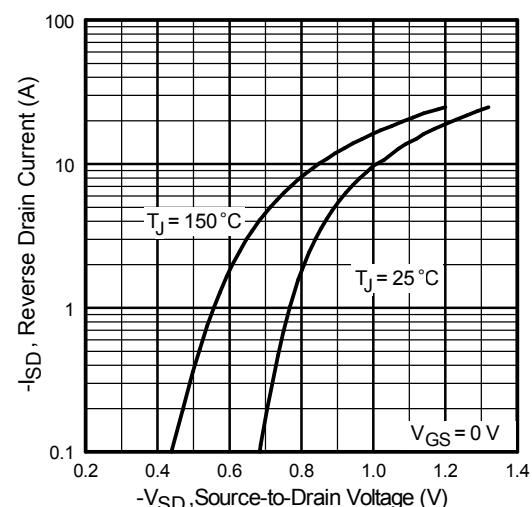
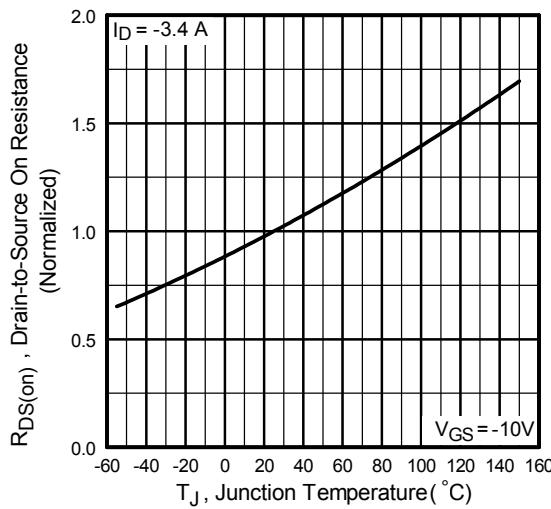
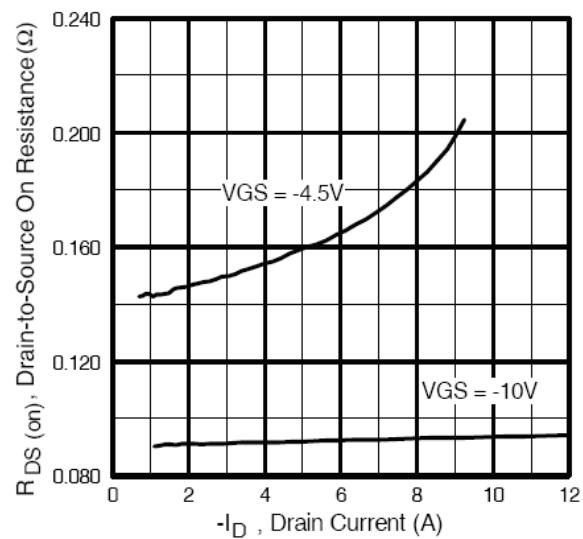


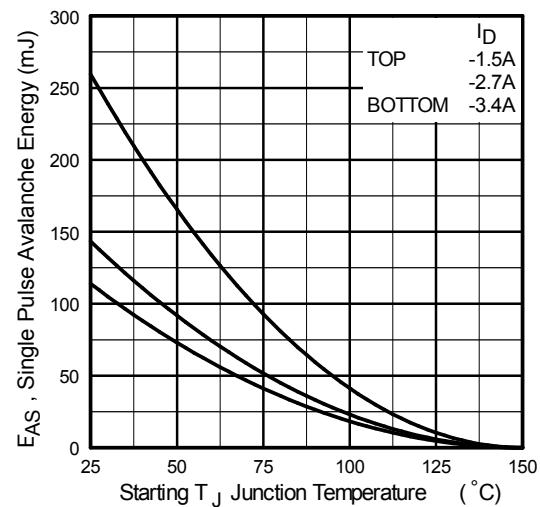
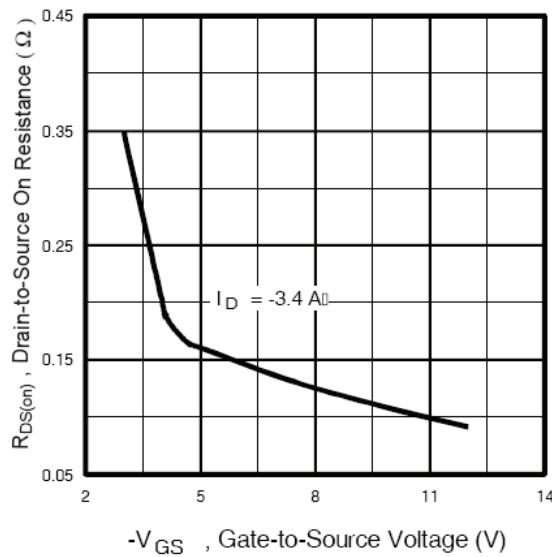
Fig. 15 Typical Source-Drain Diode Forward Voltage



**Fig 16.** Normalized On-Resistance Vs. Temperature

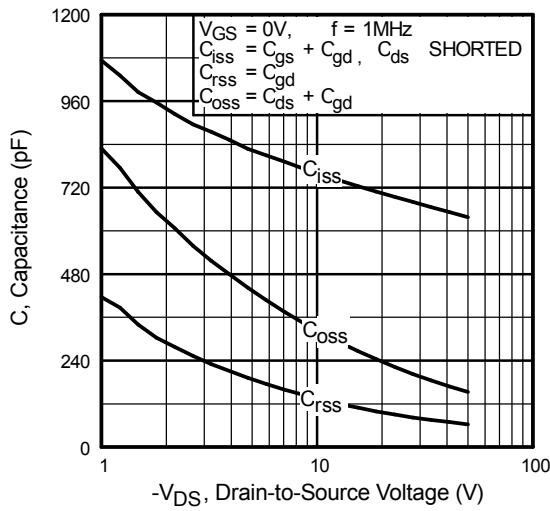


**Fig 17.** Typical On-Resistance Vs. Drain Current

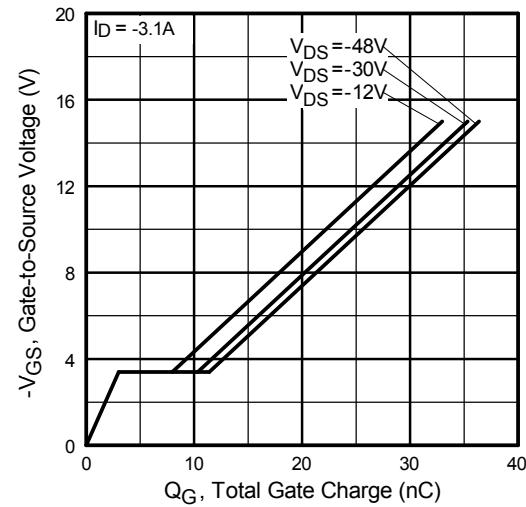


**Fig. 18** Typical On-Resistance Vs. Gate Voltage

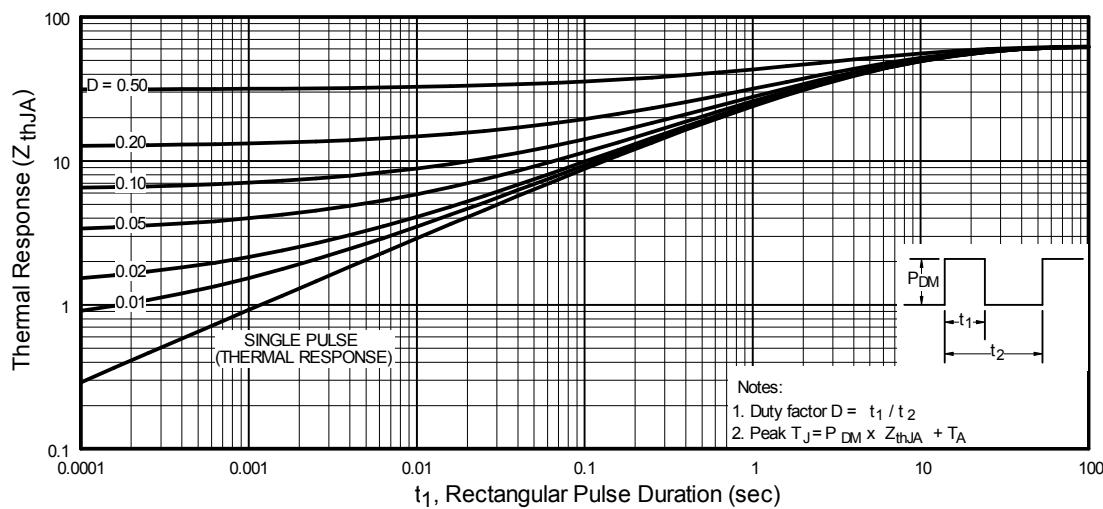
**Fig 19.** Maximum Avalanche Energy Vs. Drain Current



**Fig 20.** Typical Capacitance Vs.  
Drain-to-Source Voltage

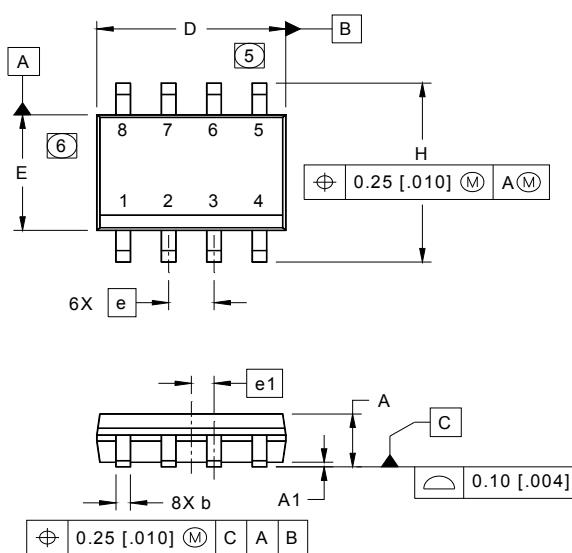


**Fig 21.** Typical Gate Charge Vs.  
Gate-to-Source Voltage



**Fig 22.** Maximum Effective Transient Thermal Impedance, Junction-to-Ambient

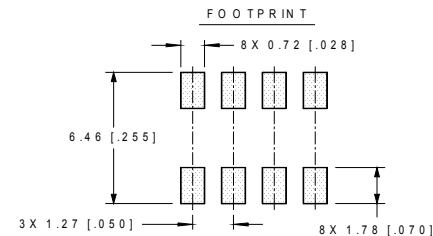
## SO-8 Package Outline (Dimensions are shown in millimeters (inches))



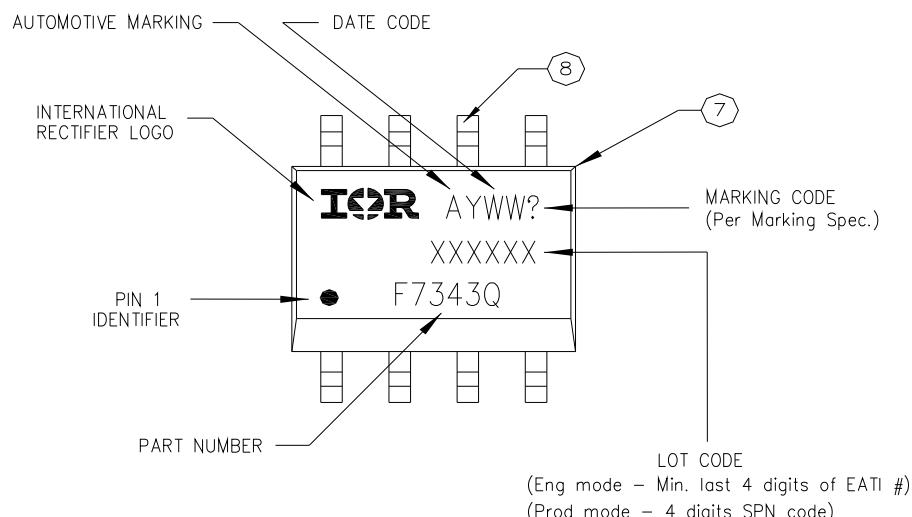
DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.0532	.0688	1.35	1.75
A1	.0040	.0098	0.10	0.25
b	.013	.020	0.33	0.51
c	.0075	.0098	0.19	0.25
D	.189	.1968	4.80	5.00
E	.1497	.1574	3.80	4.00
e	.050	BASIC	1.27	BASIC
e 1	.025	BASIC	0.635	BASIC
H	.2284	.2440	5.80	6.20
K	.0099	.0196	0.25	0.50
L	.016	.050	0.40	1.27
y	0°	8°	0°	8°

NOTES:

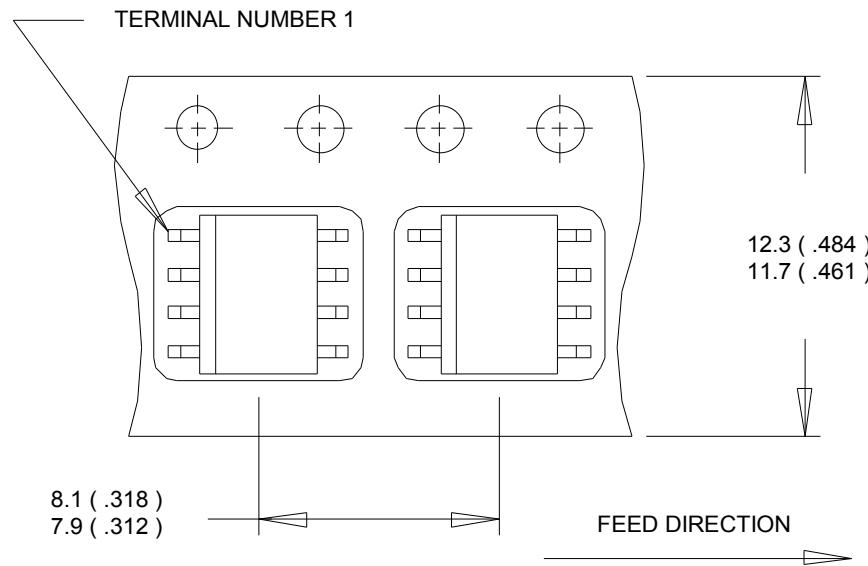
1. DIMENSIONING & TOLERANCING PER ASME Y14.5M -1994.
2. CONTROLLING DIMENSION: MILLIMETER.
3. DIMENSIONS ARE SHOWN IN MILLIMETERS [INCHES].
4. OUTLINE CONFORMS TO JEDEC OUTLINE EIA-751-A.
5. DIMENSION DOES NOT INCLUDE MOLD PROTRUSIONS. MOLD PROTRUSIONS NOT TO EXCEED 0.15 [.006].
6. DIMENSION DOES NOT INCLUDE MOLD PROTRUSIONS. MOLD PROTRUSIONS NOT TO EXCEED 0.25 [.010].
7. DIMENSION IS THE LENGTH OF LEAD FOR SOLDERING TO A SUBSTRATE.



## SO-8 Part Marking Information

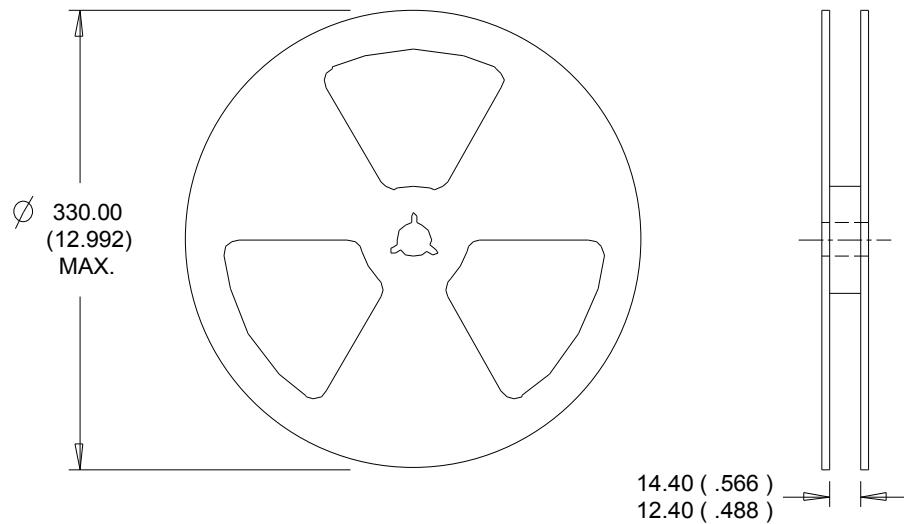


**SO-8 Tape and Reel** (Dimensions are shown in millimeters (inches))



NOTES:

1. CONTROLLING DIMENSION : MILLIMETER.
2. ALL DIMENSIONS ARE SHOWN IN MILLIMETERS(INCHES).
3. OUTLINE CONFORMS TO EIA-481 & EIA-541.



NOTES :

1. CONTROLLING DIMENSION : MILLIMETER.
2. OUTLINE CONFORMS TO EIA-481 & EIA-541.

**Qualification Information**

<b>Qualification Level</b>		Automotive (per AEC-Q101)	
		Comments: This part number(s) passed Automotive qualification. Infineon's Industrial and Consumer qualification level is granted by extension of the higher Automotive level.	
<b>Moisture Sensitivity Level</b>		SO-8	MSL1
<b>ESD</b>	Machine Model	Class M2 (+/- 200V) <sup>†</sup> AEC-Q101-002	
	Human Body Model	Class H1A (+/- 500V) <sup>†</sup> AEC-Q101-001	
	Charged Device Model	Class C5 (+/- 1125V) <sup>†</sup> AEC-Q101-005	
<b>RoHS Compliant</b>		Yes	

<sup>†</sup> Highest passing voltage.

**Revision History**

Date	Comments
3/10/2014	<ul style="list-style-type: none"> <li>• Added "Logic Level Gate Drive" bullet in the features section on page 1</li> <li>• Updated data sheet with new IR corporate template</li> </ul>
9/30/2015	<ul style="list-style-type: none"> <li>• Updated datasheet with corporate template</li> <li>• Corrected ordering table on page 1.</li> </ul>

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ООО "ЛайфЭлектроникс"

"LifeElectronics" LLC

ИНН 7805602321 КПП 780501001 Р/С 40702810122510004610 ФАКБ "АБСОЛЮТ БАНК" (ЗАО) в г.Санкт-Петербурге К/С 30101810900000000703 БИК 044030703

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибуторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибуторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помочь разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



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