

AUTOMOTIVE GRADE

AUIRFR8403 AUIRFU8403

HEXFET® Power MOSFET

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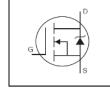
Source

Features

- Advanced Process Technology
- New Ultra Low On-Resistance
- 175°C Operating Temperature
- Fast Switching
- Repetitive Avalanche Allowed up to Tjmax

Specifically designed for Automotive applications, this HEXFET® Power MOSFET utilizes the latest processing techniques to achieve extremely low on-resistance per silicon area. Additional features of this design are a 175°C junction operating temperature, fast switching speed and improved repetitive avalanche rating. These features combine to make this design an extremely efficient and reliable device for

- · Lead-Free, RoHS Compliant
- Automotive Qualified *



V_{DSS}		40V
R _{DS(on)}	typ.	2.4m $Ω$
	max.	3.1m Ω
ID (Silicon Lim	ited)	127A①
D (Package Li	mited)	100A

D D D S S G G D D-Pak I-Pak AUIRFR8403 AUIRFU8403

D

Drain

G

Gate

use in Automotive applications and wide variety of other applications. **Applications**

Description

- Electric Power Steering (EPS)
- Battery Switch
- Start/Stop Micro Hybrid
- Heavy Loads
- DC-DC Converter

Dage next number	Dookogo Typo	Standard Pack	(Orderable Part Number
Base part number	Package Type	Form	Quantity	Orderable Part Number
AUIRFU8403	I-Pak	Tube	75	AUIRFU8403
ALUDED0402	D. Dak	Tube	75	AUIRFR8403
AUIRFR8403	D-Pak	Tane and Reel Left	3000	AURFR8403TRI

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
I _D @ T _C = 25°C	Continuous Drain Current, V _{GS} @ 10V (Silicon Limited)	127①	
I _D @ T _C = 100°C	Continuous Drain Current, V _{GS} @ 10V (Silicon Limited)	90	
I _D @ T _C = 25°C	Continuous Drain Current, V _{GS} @ 10V (Package Limited)	100	A
I _{DM}	Pulsed Drain Current ②	520⑩	
P _D @T _C = 25°C	Maximum Power Dissipation	99	W
	Linear Derating Factor	0.66	W/°C
V_{GS}	Gate-to-Source Voltage	± 20	V
TJ	Operating Junction and	-55 to + 175	
T_{STG}	Storage Temperature Range		°C
	Soldering Temperature, for 10 seconds (1.6mm from case)	300	

Avalanche Characteristics

A Transmission of the action o				
E _{AS}	Single Pulse Avalanche Energy (Thermally Limited) ③	114	m l	
E _{AS} (tested)	Single Pulse Avalanche Energy (Tested Limited) ③	148	mJ	
I _{AR}	Avalanche Current ②	See Fig. 14, 15, 24a, 24b	Α	
E _{AR}	Repetitive Avalanche Energy ②		mJ	

Thermal Resistance

Symbol	Parameter	Тур.	Max.	Units		
$R_{\theta JC}$	Junction-to-Case		1.52			
$R_{ heta JA}$	Junction-to-Ambient (PCB Mount) ®		50	°C/W		
$R_{ heta JA}$	Junction-to-Ambient		110			

HEXFET® is a registered trademark of Infineon.

^{*}Qualification standards can be found at www.infineon.com



Static @ T_J = 25°C (unless otherwise specified)

	Parameter	Min.	Тур.	Max.	Units	Conditions
$V_{(BR)DSS}$	Drain-to-Source Breakdown Voltage	40			V	$V_{GS} = 0V, I_D = 250\mu A$
$\Delta V_{(BR)DSS}/\Delta T_J$	Breakdown Voltage Temp. Coefficient		0.03		V/°C	Reference to 25°C, I _D = 5mA ③
R _{DS(on)}	Static Drain-to-Source On-Resistance		2.4	3.1	mΩ	V _{GS} = 10V, I _D = 76A ⑤
$V_{GS(th)}$	Gate Threshold Voltage	2.2	3.0	3.9	V	$V_{DS} = V_{GS}$, $I_D = 100 \mu A$
	Drain to Source Leekage Current			1.0	μA	$V_{DS} = 40V, V_{GS} = 0V$
I _{DSS}	Drain-to-Source Leakage Current			150	μΑ	$V_{DS} = 40V, V_{GS} = 0V, T_{J} = 125^{\circ}C$
	Gate-to-Source Forward Leakage			100	n ^	$V_{GS} = 20V$
I _{GSS}	Gate-to-Source Reverse Leakage			-100	nA	$V_{GS} = -20V$
R_G	Internal Gate Resistance		1.5		Ω	

Dynamic Electrical Characteristics @ T_J = 25°C (unless otherwise specified)

•	O , ,		•	,		
gfs	Forward Trans conductance	283			S	$V_{DS} = 10V, I_{D} = 76A$
Q_g	Total Gate Charge		66	99		I _D = 76A
Q_{gs}	Gate-to-Source Charge		18		nC	$V_{DS} = 20V$
Q_{gd}	Gate-to-Drain Charge		22		IIC	V _{GS} = 10V ^⑤
Q _{sync}	Total Gate Charge Sync. (Q _g - Q _{gd})		44			
$t_{d(on)}$	Turn-On Delay Time		10			$V_{DD} = 26V$
t _r	Rise Time		32		20	I _D = 76A
$t_{d(off)}$	Turn-Off Delay Time		31		ns	$R_G = 2.7\Omega$
t_f	Fall Time		23			V _{GS} = 10V⑤
C _{iss}	Input Capacitance		3171			$V_{GS} = 0V$
Coss	Output Capacitance		477			$V_{DS} = 25V$
C_{rss}	Reverse Transfer Capacitance		331		pF	f = 1.0MHz, See Fig. 5
Coss eff. (ER)	Effective Output Capacitance (Energy Related)		573			V_{GS} = 0V, V_{DS} = 0V to 32V ⑦
Coss eff. (TR)	Effective Output Capacitance (Time Related)		681			$V_{GS} = 0V, V_{DS} = 0V \text{ to } 32V $

Diode Characteristics

	Parameter	Min.	Typ	Max.	Units	Conditions
		IVIIII.	Тур.	IVIAX.	 	
I _S	Continuous Source Current			127①		MOSFET symbol
IS	(Body Diode)			1270	Α	showing the
	Pulsed Source Current			520⑩		integral reverse
I _{SM}	(Body Diode) ①			5200		p-n junction diode.
V_{SD}	Diode Forward Voltage		0.9	1.3	V	$T_J = 25^{\circ}C, I_S = 76A, V_{GS} = 0V $ §
dv/dt	Peak Diode Recovery dv/dt⊕		5.1		V/ns	
t _{rr}	Reverse Recovery Time		25		no	$T_J = 25^{\circ}C$ $V_R = 34V$,
			26		ns	$T_J = 125^{\circ}C$ $I_F = 76A$
Q_{rr}	Reverse Recovery Charge		20			$T_J = 25^{\circ}C$ di/dt = 100A/µs ©
	_		21		nC	$T_J = 125$ °C di/dt = 100A/µs s
I _{RRM}	Reverse Recovery Current		1.2		Α	T _J = 25°C

Notes:

- Calculated continuous current based on maximum allowable junction temperature. Bond wire current limit is 100A by source bonding technology. Note that current limitations arising from heating of the device leads may occur with some lead mounting arrangements. (Refer to AN-1140)
- ② Repetitive rating; pulse width limited by max. junction temperature. (See fig. 11)
- ③ Limited by T_{Jmax} , starting $T_J = 25$ °C, L = 0.039mH, $R_G = 50\Omega$, $I_{AS} = 76$ A, $V_{GS} = 10$ V. Part not recommended for use above this value.
- \P I_{SD} $\leq 76A$, di/dt $\leq 1255A/\mu s$, V_{DD} $\leq V_{(BR)DSS}$, T_J $\leq 175^{\circ}C$.
- ⑤ Pulse width $\leq 400 \mu s$; duty cycle $\leq 2\%$.
- \odot C_{oss eff.} (TR) is a fixed capacitance that gives the same charging time as C_{oss} while V_{DS} is rising from 0 to 80% V_{DSS}.
- © Coss eff. (ER) is a fixed capacitance that gives the same energy as Coss while V_{DS} is rising from 0 to 80% V_{DSS}.

 ® When mounted on 1" square PCB (FR-4 or G-10 Material). For recommended footprint and soldering techniques refer to application note #AN-994
- $^{\circ}$ R_θ is measured at T_J approximately 90°C.
- Pulse drain current is limited by source bonding technology.

2017-10-03

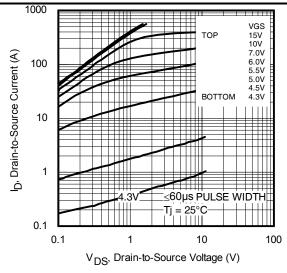


Fig. 1 Typical Output Characteristics

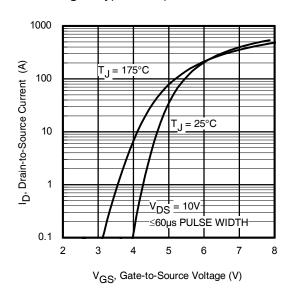


Fig. 3 Typical Transfer Characteristics

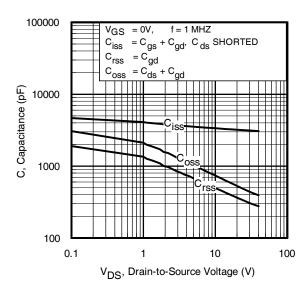


Fig 5. Typical Capacitance vs. Drain-to-Source Voltage

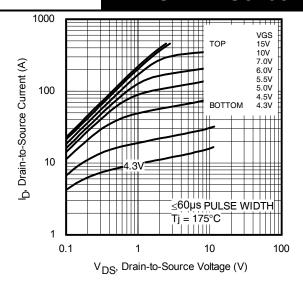


Fig. 2 Typical Output Characteristics

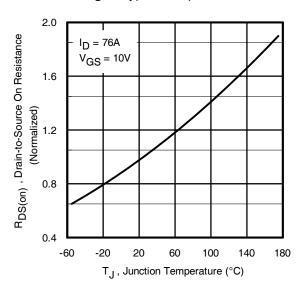


Fig. 4 Normalized On-Resistance vs. Temperature

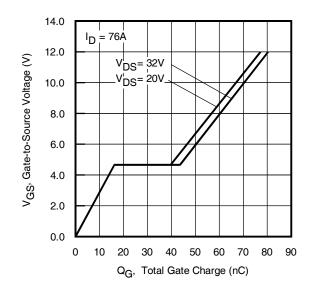
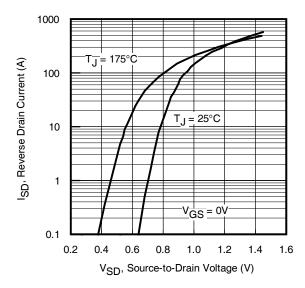


Fig 6. Typical Gate Charge vs. Gate-to-Source Voltage





10000 OPERATION IN THIS AREA 1000 I_D, Drain-to-Source Current (A) 100 10 0.1 Tj = 175°C Single Pulse 0.01 0.1 10 100 V_{DS}, Drain-to-Source Voltage (V)

Fig. 7 Typical Source-to-Drain Diode Forward Voltage

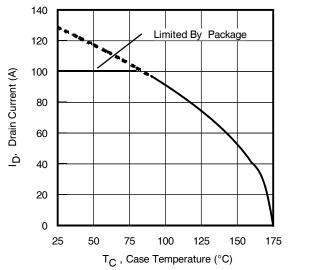


Fig 8. Maximum Safe Operating Area V(BR)DSS, Drain-to-Source Breakdown Voltage (V) Id = 5.0mA49 48 47 46 45 44 43 42 41 40 -60 -20 100 140 180 T_J , Temperature ($^{\circ}C$)

Fig 10. Drain-to-Source Breakdown Voltage

Р

13A

24A

76A

TOP

BOTTOM

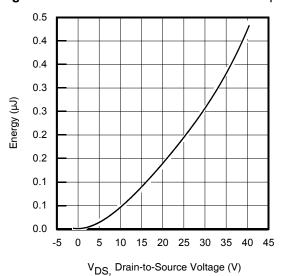
500

400

300

200

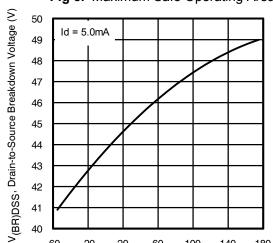
Fig. 9 Maximum Drain Current vs. Case Temperature



 E_{AS} , Single Pulse Avalanche Energy (mJ) 100 0 25 50 75 100 125 150 175 Starting T_J , Junction Temperature (°C)

Fig. 11 Typical Coss Stored Energy

Fig 12. Maximum Avalanche Energy vs. Drain Current





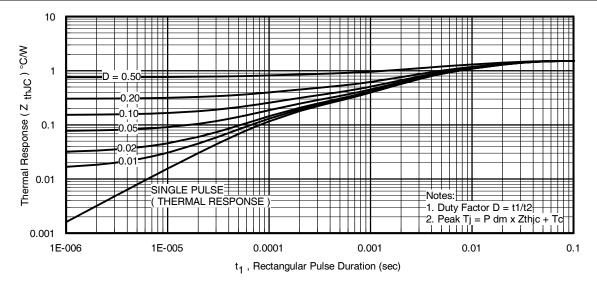


Fig 13. Maximum Effective Transient Thermal Impedance, Junction-to-Case

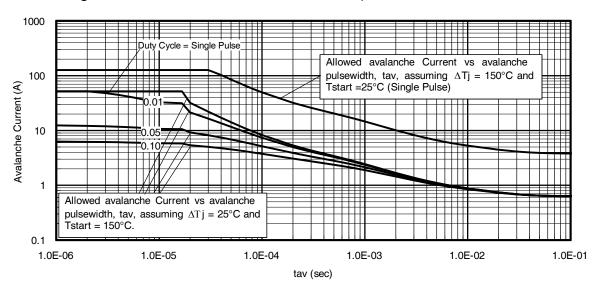


Fig 14. Typical Avalanche Current Vs. Pulse width

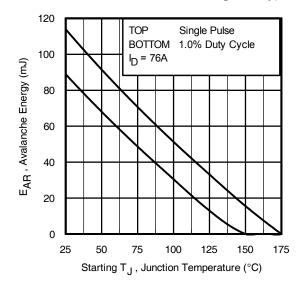


Fig 15. Maximum Avalanche Energy Vs. Temperature

Notes on Repetitive Avalanche Curves, Figures 14, 15: (For further info, see AN-1005 at www.infineon.com)

- (For further info, see AN-1005 at www.infineon.com)

 1. Avalanche failures assumption:
 - Purely a thermal phenomenon and failure occurs at a temperature far in excess of T_{jmax}. This is validated for every part type.
- 2. Safe operation in Avalanche is allowed as long as T_{jmax} is not exceeded.
- 3. Equation below based on circuit and waveforms shown in Figures 24a, 24b.
- 4. PD (ave) = Average power dissipation per single avalanche pulse.
- BV = Rated breakdown voltage (1.3 factor accounts for voltage increase during avalanche).
- 6. lav = Allowable avalanche current.
- 7. ΔT = Allowable rise in junction temperature, not to exceed T_{jmax} (assumed as 25°C in Figure 13, 14).

tav = Average time in avalanche.

D = Duty cycle in avalanche = tav ·f

ZthJC(D, tav) = Transient thermal resistance, see Figures 13)

$$\begin{split} P_{D \text{ (ave)}} &= 1/2 \text{ (} 1.3 \cdot \text{BV} \cdot \text{I}_{av} \text{)} = \Delta \text{T} / \text{Z}_{thJC} \\ I_{av} &= 2\Delta \text{T} / \text{ [} 1.3 \cdot \text{BV} \cdot \text{Z}_{th} \text{]} \\ E_{AS \text{ (AR)}} &= P_{D \text{ (ave)}} \cdot t_{av} \end{split}$$

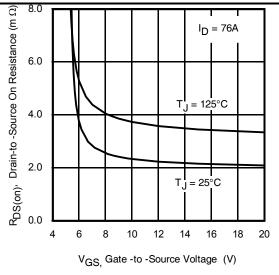


Fig 16. On-Resistance vs. Gate Voltage

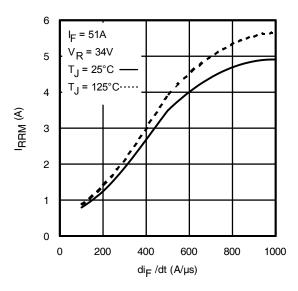


Fig. 18 - Typical Recovery Current vs. dif/dt

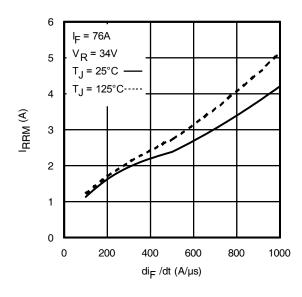


Fig. 20 - Typical Recovery Current vs. dif/dt

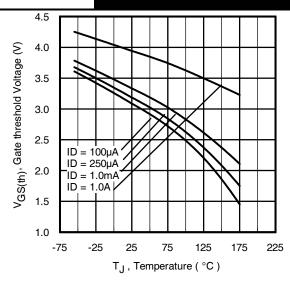


Fig. 17 - Threshold Voltage vs. Temperature

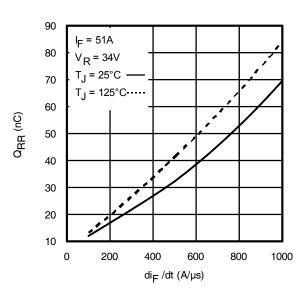


Fig. 19 - Typical Stored Charge vs. dif/dt

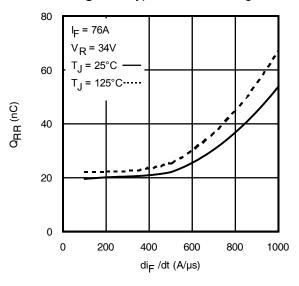


Fig. 21 - Typical Stored Charge vs. dif/dt



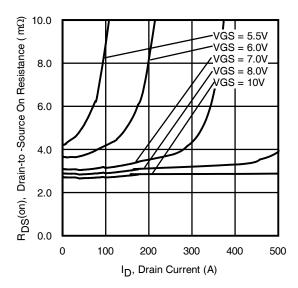


Fig 22. Typical On-Resistance vs. Drain Current



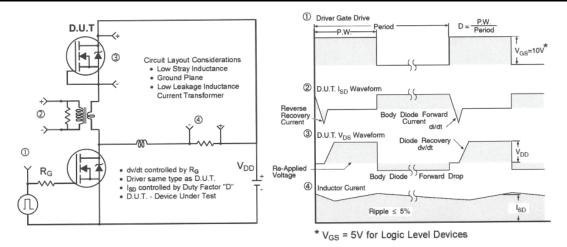


Fig 23. Peak Diode Recovery dv/dt Test Circuit for N-Channel HEXFET® Power MOSFETs

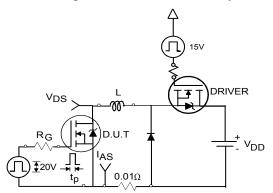


Fig 24a. Unclamped Inductive Test Circuit

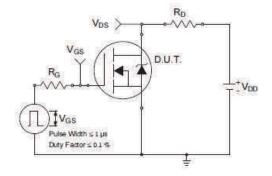


Fig 25a. Switching Time Test Circuit

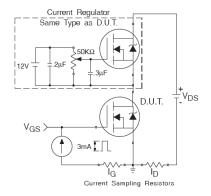


Fig 26a. Gate Charge Test Circuit

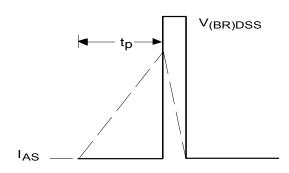


Fig 24b. Unclamped Inductive Waveforms

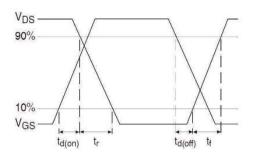


Fig 25b. Switching Time Waveforms

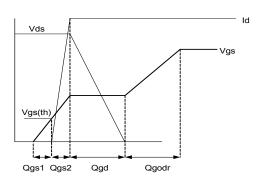


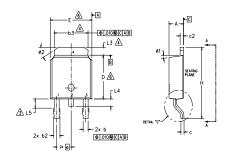
Fig 26b. Gate Charge Waveform

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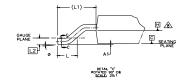
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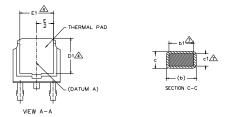


D-Pak (TO-252AA) Package Outline (Dimensions are shown in millimeters (inches))









NOTES:

- 1.- DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994
- 2.- DIMENSION ARE SHOWN IN INCHES [MILLIMETERS].
- 1 LEAD DIMENSION UNCONTROLLED IN L5.
- A- DIMENSION D1, E1, L3 & b3 ESTABLISH A MINIMUM MOUNTING SURFACE FOR THERMAL PAD.
- 5.- SECTION C-C DIMENSIONS APPLY TO THE FLAT SECTION OF THE LEAD BETWEEN .005 AND 0.10 [0.13 AND 0.25] FROM THE LEAD TIP.
- bildension D & E DO NOT INCLUDE MOLD FLASH. MOLD FLASH SHALL NOT EXCEED .005 [0.13] PER SIDE. THESE DIMENSIONS ARE MEASURED AT THE OUTMOST EXTREMES OF THE PLASTIC BODY.
- A- DIMENSION b1 & c1 APPLIED TO BASE METAL ONLY.
- 9.- OUTLINE CONFORMS TO JEDEC OUTLINE TO-252AA.

S Y M B DIMENSIONS N O T E M B B B B B B B B B B B B B B B B B B B								
B O L MINLIMETERS INCHES T E S E S E S E S E S E S E S E S E S E			DIMENSIONS					
A 2.18 2.39 .086 .094 A1 - 0.13005 b 0.64 0.89 .025 .035 b1 0.65 0.79 .025 .031 7 b2 0.76 1.14 .030 .045 b3 4.95 5.46 .195 .215 4 c 0.46 0.61 .018 .022 7 c2 0.46 0.89 .018 .035 D 5.97 6.22 .235 .245 6 D1 5.21205 - 4 E 6.35 6.73 .250 .265 6 E1 4.32170 - 4 E 6.35 6.73 .250 .265 6 E1 4.32170 - 4 E 2.29 BSC .090 BSC H 9.40 10.41 .370 .410 L 1.40 1.78 .055 .070 L1 2.74 BSC .108 REF. L2 0.51 BSC .020 BSC L3 0.89 1.27 .035 .050 4 L4102040 L5 1.14 1.52 .045 .060 3 Ø 0° 10° 0° 10° Ø1 0° 15° 0° 15°	В	MILLIMETERS IN			HES	Ť		
A1 - 0.13 - .005 b 0.64 0.89 .025 .035 b1 0.65 0.79 .025 .031 7 b2 0.76 1.14 .030 .045 b3 4.95 5.46 .195 .215 4 c 0.46 0.61 .018 .024 7 c2 0.46 0.89 .018 .035 6 D 5.97 6.22 .235 .245 6 D1 5.21 - .205 - 4 E 6.35 6.73 .250 .265 6 E1 4.32 - .170 - 4 e 2.29 BSC .090 BSC H 9.40 10.41 .370 .410 L 1.40 1.78 .055 .070 L1 2.74 BSC .108 REF.		MIN.	MAX.	MIN.	MAX.	E S		
b 0.64 0.89 .025 .035 b1 0.65 0.79 .025 .031 7 b2 0.76 1.14 .030 .045 b3 4.95 5.46 .195 .215 4 c 0.46 0.61 .018 .024 7 c1 0.41 0.56 .016 .022 7 c2 0.46 0.89 .018 .035 D 5.97 6.22 .235 .245 6 D1 5.21 - .205 - 4 E 6.35 6.73 .250 .265 6 E1 4.32 - .170 - 4 e 2.29 BSC .090 BSC H 9.40 10.41 .370 .410 L 1.140 1.78 .055 .070 L1 2.74 BSC .108 REF. <tr< td=""><td>Α</td><td>2.18</td><td>2.39</td><td>.086</td><td>.094</td><td></td></tr<>	Α	2.18	2.39	.086	.094			
b1 0.65 0.79 .025 .031 7 b2 0.76 1.14 .030 .045 b3 4.95 5.46 .195 .215 4 c 0.46 0.61 .018 .024 7 c2 0.46 0.89 .018 .035 6 D 5.97 6.22 .235 .245 6 D1 5.21 — .205 — 4 E 6.35 6.73 .250 .265 6 E1 4.32 — .170 — 4 e 2.29 BSC .090 BSC H 9.40 10.41 .370 .410 L 1.140 1.78 .055 .070 L1 2.74 BSC .108 REF. L2 0.51 BSC .020 BSC L3 0.89 1.27 .035 .050 4 <td>A1</td> <td>_</td> <td>0.13</td> <td>-</td> <td>.005</td> <td></td>	A1	_	0.13	-	.005			
b2 0.76 1.14 0.30 0.045 b3 4.95 5.46 .195 .215 4 c 0.46 0.61 .018 .024 7 c1 0.41 0.56 .016 .022 7 c2 0.46 0.89 .018 .035 D 5.97 6.22 .235 .245 6 D1 5.21 - .205 - 4 E 6.35 6.73 .250 .265 6 E1 4.32 - .170 - 4 e 2.29 BSC .090 BSC H 9.40 10.41 .370 .410 L 1.40 1.78 .055 .070 L1 2.74 BSC .108 REF. L2 0.51 BSC .020 BSC L3 0.89 1.27 .035 .050 4	b	0.64	0.89	.025	.035			
b3	ь1	0.65	0.79	.025	.031	7		
c 0.46 0.61 .018 .024 c1 0.41 0.56 .016 .022 7 c2 0.46 0.89 .018 .035 6 D 5.97 6.22 .235 .245 6 D1 5.21 - .205 - 4 E 6.35 6.73 .250 .265 6 E1 4.32 - .170 - 4 e 2.29 BSC .090 BSC H 9.40 10.41 .370 .410 L 1.40 1.78 .055 .070 L1 2.74 BSC .108 REF. L2 0.51 BSC .020 BSC L3 0.89 1.27 .035 .050 4 L4 - 1.02 - .040 L5 1.14 1.52 .045 .060 3	b2	0.76	1.14	.030	.045			
c1 0.41 0.56 .016 .022 7 c2 0.46 0.89 .018 .035 6 D 5.97 6.22 .235 .245 6 D1 5.21 - .205 - 4 E 6.35 .250 .265 6 E1 4.32 - .170 - 4 e 2.29 BSC .090 BSC H 9.40 10.41 .370 .410 L 1.40 1.78 .055 .070 L1 2.74 BSC .108 REF. L2 0.51 BSC .020 BSC L3 0.89 1.27 .035 .050 4 L4 - 1.02 - .040 L5 1.14 1.52 .045 .060 3 Ø 0° 10° 0° 10° 10° Ø	b3	4.95	5.46	.195	.215	4		
c2 0.46 0.89 .018 .035 D 5.97 6.22 .235 .245 6 D1 5.21 - .205 - 4 E 6.35 6.73 .250 .265 6 E1 4.32 - .170 - 4 e 2.29 BSC .090 BSC H 9.40 10.41 .370 .410 L 1.40 1.78 .055 .070 L1 2.74 BSC .108 REF. L2 0.51 BSC .020 BSC L3 0.89 1.27 .035 .050 4 L4 - 1.02 - .040 L5 1.14 1.52 .045 .060 3 Ø 0° 10° 0° 10° Ø 0° 10° 0° 15°	С	0.46	0.61	.018	.024			
D 5.97 6.22 .235 .245 6	c1	0.41	0.56	.016	.022	7		
D1	c2	0.46	0.89	.018	.035			
E 6.35 6.73 .250 .265 6 E1 4.32170 - 4 e 2.29 BSC .090 BSC H 9.40 10.41 .370 .410 L 1.40 1.78 .055 .070 L1 2.74 BSC .108 REF. L2 0.51 BSC .020 BSC L3 0.89 1.27 .035 .050 4 L4 - 1.02040 L5 1.14 1.52 .045 .060 3 ø 0° 10° 0° 10° 0° 10° ø1 0° 15° 0° 15°	D	5.97	6.22	.235	.245	6		
E1 4.32 - .170 - 4 e 2.29 BSC .090 BSC H 9.40 10.41 .370 .410 L 1.40 1.78 .055 .070 L1 2.74 BSC .108 REF. L2 0.51 BSC .020 BSC L3 0.89 1.27 .035 .050 4 L4 - 1.02 - .040 L5 1.14 1.52 .045 .060 3 Ø 0° 10° 0° 10° Ø1 0° 15° 0° 15°	D1	5.21	-	.205	-	4		
e 2.29 BSC .090 BSC H 9.40 10.41 .370 .410 L 1.40 1.78 .055 .070 L1 2.74 BSC .108 REF. L2 0.51 BSC .020 BSC L3 0.89 1.27 .035 .050 4 L4 - 1.02 - .040 L5 1.14 1.52 .045 .060 3 Ø 0° 10° 0° 10° 0° 15° Ø1 0° 15° 0° 15° 0° 15°	Ε	6.35	6.73	.250	.265	6		
H 9.40 10.41 .370 .410	E1	4.32	-	.170	-	4		
L 1.40 1.78 .055 .070 L1 2.74 BSC .108 REF. L2 0.51 BSC .020 BSC L3 0.89 1.27 .035 .050 4 L4 - 1.02040 L5 1.14 1.52 .045 .060 3 Ø 0° 10° 0° 10° 0° 10° Ø1 0° 15° 0° 15°	е	2.29	BSC	.090	BSC			
L1	Н	9.40	10.41	.370	.410			
L2 0.51 BSC .020 BSC L3 0.89 1.27 .035 .050 4 L4 - 1.02 - .040 .045 .060 3 Ø 0° 10° 0° 10° 9 15° 15° 15°	L	1.40	1.78	.055	.070			
L3 0.89 1.27 .035 .050 4 L4 - 1.02040 L5 1.14 1.52 .045 .060 3 Ø 0° 10° 0° 10° Ø1 0° 15° 0° 15°	L1	2.74	BSC	.108	REF.			
L4 - 1.02 - .040 L5 1.14 1.52 .045 .060 3 Ø 0° 10° 0° 10° Ø1 0° 15° 0° 15°	L2	0.51	BSC	.020	BSC			
L5 1.14 1.52 .045 .060 3 ø 0° 10° 0° 10° ø1 0° 15° 0° 15°	L3	0.89	1.27	.035	.050	4		
ø 0° 10° 0° 10° ø 0° 15° 0° 15°	L4	-	1.02	-	.040			
ø1 0° 15° 0° 15°	L5	1.14	1.52	.045	.060	3		
	ø	0.	10°	0,	10°			
ø2 25° 35° 25° 35°	ø1	0,	15*	0,	15*			
	ø2	25*	35°	25*	35*			

LEAD ASSIGNMENTS

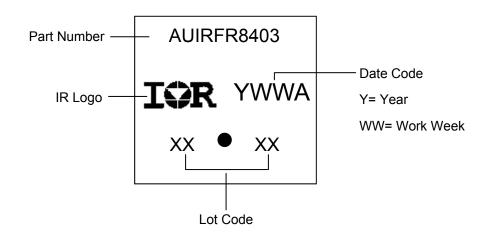
HEXFET

- 1.- GATE
- 2.- DRAIN 3.- SOURCE
- 4.- DRAIN

IGBT & CoPAK

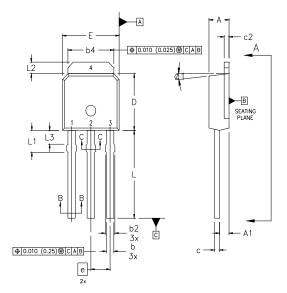
- 1.- GATE
- 2.- COLLECTOR
- 3.- EMITTER
- 4.- COLLECTOR

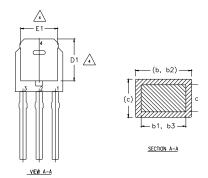
D-Pak (TO-252AA) Part Marking Information





I-Pak (TO-251AA) Package Outline (Dimensions are shown in millimeters (inches)





NOTES:

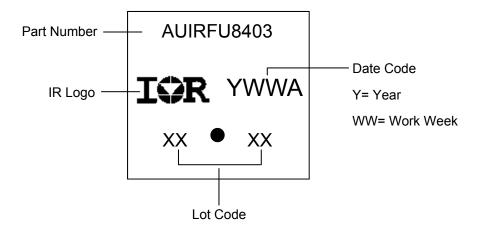
- 1 DIMENSIONING AND TOLERANCING PER ASME Y14.5 M- 1994.
- 2 DIMENSIONS ARE SHOWN IN MILLIMETERS [INCHES].
- JIMENSION D & E DO NOT INCLUDE MOLD FLASH. MOLD FLASH SHALL NOT EXCEED 0.005" (0.127) PER SIDE. THESE DIMENSIONS ARE MEASURED AT THE OUTERMOST EXTREMES OF THE PLASTIC BODY.
- 4 THERMAL PAD CONTOUR OPTION WITHIN DIMENSION 64, L2, E1 & D1.
 - LEAD DIMENSION UNCONTROLLED IN L3.
- 6 DIMENSION 61, 63 APPLY TO BASE METAL ONLY.
- 7 OUTLINE CONFORMS TO JEDEC OUTLINE TO-251AA.
- 8 CONTROLLING DIMENSION : INCHES.

LEAD ASSIGNMENTS

н	FΥ	F	FT

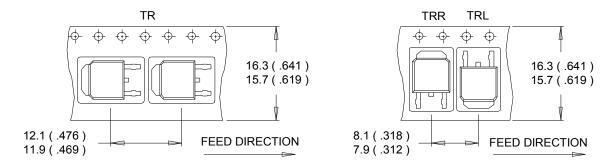
- 1.- GATE
- 2.- DRAIN
- 3.- SOURCE 4.- DRAIN
- DIMENSIONS SYMBOL MILLIMETERS INCHES MIN. NOTES 2.18 2.39 0.086 .094 A1 0.89 1.14 0.035 0.045 b 0.64 0.89 0.025 0.035 ь1 0.64 0.79 0.025 0.031 b2 0.76 1.14 0.030 0.045 0.76 1.04 0.030 0.041 5.00 5.46 0.195 0.215 b4 0.46 0.61 0.018 0.024 0.016 0.41 0.56 0.022 c1 0.018 c2 .046 0.86 0.035 D 5.97 6.22 0.235 0.245 D1 5.21 0.205 6.35 6.73 0.250 0.265 E1 4.32 0.170 0.090 BSC е L 8.89 9.60 0.350 0.380 L1 1.91 2.29 0.075 0.090 L2 0.89 1.27 0.035 0.050 L3 1.14 1.52 0.045 0.060 ø1 15*

I-Pak (TO-251AA) Part Marking Information



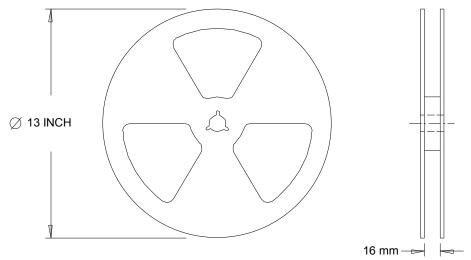


D-Pak (TO-252AA) Tape & Reel Information (Dimensions are shown in millimeters (inches))



NOTES:

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



NOTES:

1. OUTLINE CONFORMS TO EIA-481.



Qualification Information

40000000						
		Automotive (per AEC-Q101)				
Qualification Level Comments: This part number(s) passed Automotive qualification. Industrial and Consumer qualification level is granted by extension of Automotive level.						
		D-Pak	MCI 1			
Woisture	Sensitivity Level	I-Pak	MSL1			
	Machine Madel	Class M2 (+/- 200V) [†]				
	Machine Model	AEC-Q101-002				
FOD	Liverson Dady Madal	Class H1C (+/- 2000V) [†]				
ESD	Human Body Model	AEC-Q101-001				
	Channed Davies Madel	Class C5 (+/- 2000V) [†]				
Charged Device Model		AEC-Q101-005				
RoHS Compliant		Yes				

[†] Highest passing voltage.

Revision History

Date	Comments			
10/12/2015	 Updated datasheet with corporate template Corrected ordering table on page 1. 			
10/03/2017	Corrected typo error on part marking on page 9 and 10.			

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