

## Peak Performance In the 21<sup>st</sup> Century

The new Fairchild Automotive rated UltraFET® MOSFETs and Gen.4 Ignition IGBTs enhance the peak performance of automotive systems in the 21<sup>st</sup> century.

These new Automotive rated UltraFET MOSFETs represent the continuation of more than a decade of exceptional success for the versatile MegaFET series. Over this period, the automotive design community has embraced the technology and, as a result, the MegaFETs can be found today in almost every kind of automotive application, from complex engine control modules, to high reliability

ABS systems, to radios and lighting. These new UltraFETs are designed to meet the same rigid qualification and quality/reliability standards and are manufactured in a QS9000 certified facility. All devices listed comply with the latest AEC Q101 specifications, including the newly introduced preconditioning requirements.

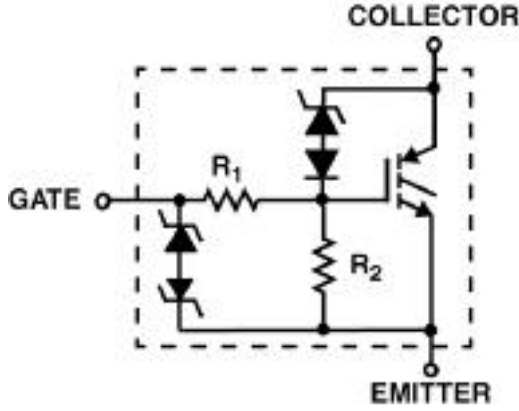
The IGBT, a power switch that combines the best attributes of bipolar and MOSFET transistor technologies, has replaced the bipolar Darlington transistor in automotive ignition applications. The Logic Level, N-Channel Ignition IGBT is a MOS gated device designed to be used as an ignition coil driver in automotive engine management systems. The Logic Level voltage-driven input allows it to be driven directly from a microprocessor output port. The unique features of the Ignition IGBT include an active voltage clamp between the collector and the gate, providing Self Clamped Inductive Switching (SCIS) capability for ignition applications. Internal gate to emitter diodes provide ESD protection for the Logic Level high impedance gate input. The MOSFET input provides high current ignition coil drive with a simple voltage controlled interface. Additional internal resistors allow for dv/dt control and gate termination during fault conditions.

With the introduction of the new Gen. 4 EcoSPARK™ family the Ignition IGBTs are now available in the smaller TO-252 (D-Pak) and surface mount packages. These devices match the electrical specification of Gen. 3 devices that, due to their larger die size, are only available in TO-220 and TO-263 (D<sup>2</sup>-Pak). With the TO-252 EcoSPARK™ devices, the board space required to integrate the ignition function in electronic engine control modules is reduced by more than 60%.

When reliability and efficient performance are critical to your application, there is no better choice than UltraFET® MOSFETs and Gen.4 Ignition IGBTs.

Inside you'll find 55V, 80V, 100V and 150V N-Channel Standard Gate, 60V, 80V and 100V N-Channel Logic Level Automotive UltraFET® Power MOSFETs and Gen. 3 and Gen. 4 EcoSPARK™ Ignition IGBTs.

Logic Level, Voltage Clamping Ignition IGBTs

	BV <sub>CE(CLP)</sub> (V)	I <sub>C</sub> (A)	V <sub>CE(ON)</sub> (V)	R1 (Ohms)	R2 (Ohms)	SCIS	TO-263AB	TO-220AB	TO-252AA
	<b>Gen. 3 Ignition IGBTs</b>								
	320–390	20@100°C	1.6@10A, 4.5V	1k (Typ)	12k - 24k	26A@L=2.3mHy	HGT1S20N35G3VLS	HGTP20N35G3VL	—
	330–390	20@100°C	1.6@10A, 4.5V	75 (Typ)	10k - 30k	26A@L=2.3mHy	HGT1S20N36G3VLS	HGTP20N36G3VL	—
	350–420	14@90°C	2.0@10A, 4.5V	1k (Typ)	None	17A@L=2.3mHy	—	HGTP14N40F3VL	—
	380–430	18@110°C	1.6@6A, 4.5V	75 (Typ)	10k - 26k	15A@L=3.0mHy	HGT1S14N40G3VLS	—	—
	330–390	14@100°C	1.45@7A, 4.5V	75 (Typ)	10k - 30k	17A@L=2.3mHy	HGT1S14N36G3VLS	HGTP14N36G3VL	—
	330–390	18@110°C	1.75@10A, 4.5V	70 (Typ)	10k - 26k	15A@L=3.0mHy	HGT1S14N37G3VLS	HGTP14N37G3VL	—
	430–475	15@90°C	1.6@10A, 4.5V	75 (Typ)	None	14.5A@L=3.0mHy	HGT1S14N44G3VLS	HGTP14N44G3VL	—
	400–500	14@90°C	2.0@10A, 4.5V	1k (Typ)	None	17A@L=2.3mHy	—	HGTP14N45G3VL	—
	<b>Gen. 4 EcoSPARK™ Ignition IGBTs</b>								
	330–390	17@110°C	1.6@6A, 4.5V	75 (Typ)	10k - 26k	14.2A@L=3.0mHy	ISL9V3036S3S	—	ISL9V3036D3S
	370–430	17@110°C	1.6@6A, 4.5V	75 (Typ)	10k - 26k	14.2A@L=3.0mHy	ISL9V3040S3S	—	ISL9V3040D3S
	370–430	16@110°C	1.9@6A, 4.5V	75 (Typ)	10k - 26k	11.5A@L=3.0mHy	—	—	ISL9V2040D3S
	330–390	39@110°C	1.6@10A, 4.5V	75 (Typ)	20k - 30k	18.3A@L=3.0mHy	ISL9V5036S3S	—	—



N-Channel, Logic Level MOSFETs

Part Number	R <sub>DS(ON)</sub> @5V	Current	Package Type
<b>60V N-Channel Logic Level MOSFETs</b>			
HUFA76445P3, HUFA76445S3S	0.0075 Ohm	75A	TO-220/TO-263AB
HUFA76443P3, HUFA76443S3S	0.0095 Ohm	75A	TO-220/TO-263AB
HUFA76439P3, HUFA76439S3S	0.014 Ohm	71A	TO-220/TO-263AB
HUFA76437P3, HUFA76437S3S	0.017 Ohm	64A	TO-220/TO-263AB
HUFA76432P3, HUFA76432S3S	0.019 Ohm	55A	TO-220/TO-263AB
HUFA76429P3, HUFA76429S3S	0.025 Ohm	44A	TO-220/TO-263AB
HUFA76429D3, HUFA76429D3S	0.027 Ohm	20A	TO-251/TO-252
HUFA76423P3, HUFA76423S3S	0.035 Ohm	33A	TO-220/TO-263AB
HUFA76423D3, HUFA76423D3S	0.037 Ohm	20A	TO-251/TO-252
HUFA76419P3, HUFA76419S3S	0.040 Ohm	27A	TO-220/TO-263AB
HUFA76419D3, HUFA76419D3S	0.043 Ohm	20A	TO-251/TO-252
HUFA76413P3	0.056 Ohm	22A	TO-220AB
HUFA76413D3, HUFA76413D3S	0.056 Ohm	20A	TO-251/TO-252
HUFA76409P3	0.070 Ohm	17A	TO-220AB
HUFA76409D3, HUFA76409D3S	0.071 Ohm	17A	TO-251/TO-252
HUFA76407P3	0.107 Ohm	12A	TO-220AB
HUFA76407D3, HUFA76407D3S	0.107 Ohm	11A	TO-251/TO-252
HUFA76407DK8	0.105 Ohm	3.5A	SO-8 Dual
<b>80V N-Channel Logic Level MOSFETs</b>			
HUFA76504DK8	0.222 Ohm	2.3A	SO-8 Dual
<b>100V N-Channel Logic Level MOSFETs</b>			
HUFA76645P3, HUFA76645S3S	0.015 Ohm	75A	TO-220/TO-263AB
HUFA76639P3, HUFA76639S3S	0.027 Ohm	50A	TO-220/TO-263AB
HUFA76633P3, HUFA76633S3S	0.036 Ohm	38A	TO-220/TO-263AB
HUFA76629D3, HUFA76629D3S	0.054 Ohm	20A	TO-251/TO-252
HUFA76619D3, HUFA76619D3S	0.087 Ohm	18A	TO-251/TO-252
HUFA76609D3, HUFA76609D3S	0.165 Ohm	10A	TO-251/TO-252

N-Channel, Standard Gate MOSFETs

Part Number	R <sub>DS(ON)</sub> @10V	Current	Package Type
<b>55V N-Channel Standard Gate MOSFETs</b>			
HUFA75345P3, HUFA75345G3, HUFA75345S3S	0.007 Ohm	75A	TO-220/TO-247/TO-263AB
HUFA75344P3, HUFA75344G3, HUFA75344S3S	0.008 Ohm	75A	TO-220/TO-247/TO-263AB
HUFA75343P3, HUFA75343G3, HUFA75343S3S	0.009 Ohm	75A	TO-220/TO-247/TO-263AB
HUFA75339P3, HUFA75339G3, HUFA75339S3S	0.012 Ohm	75A	TO-220/TO-247/TO-263AB
HUFA75337P3, HUFA75337G3, HUFA75337S3S	0.014 Ohm	75A	TO-220/TO-247/TO-263AB
HUFA75333P3, HUFA75333G3, HUFA75333S3S	0.016 Ohm	66A	TO-220/TO-247/TO-263AB
HUFA75332P3, HUFA75332G3, HUFA75332S3S	0.019 Ohm	60A	TO-220/TO-247/TO-263AB
HUFA75329P3, HUFA75329G3, HUFA75329S3S	0.024 Ohm	49A	TO-220/TO-247/TO-263AB
HUFA75329D3, HUFA75329D3S	0.026 Ohm	20A	TO-251/TO-252
HUFA75321P3, HUFA75321S3S	0.034 Ohm	35A	TO-220/TO-263AB
HUFA75321D3, HUFA75321D3S	0.036 Ohm	20A	TO-251/TO-252
HUF75309T3ST	0.070 Ohm	3A	SOT-223
HUFA75309P3, HUFA75309D3, HUFA75309D3S	0.070 Ohm	19A	TO-220/TO-251/TO-252
HUFA75307P3, HUFA75307D3, HUFA75307D3S	0.090 Ohm	15A	TO-220/TO-251/TO-252
HUFA75307T3ST	0.090 Ohm	2.6A	SOT-223
<b>80V N-Channel Standard Gate MOSFETs</b>			
HUFA75545P3, HUFA75545S3S	0.010 Ohm	75A	TO-220/TO-263AB
HUFA75542P3, HUFA75542S3S	0.014 Ohm	75A	TO-220/TO-263AB
HUFA75531SK8	0.030 Ohm	6A	SO-8 Single
<b>100V N-Channel Standard Gate MOSFETs</b>			
HUFA75652G3	0.008 Ohm	75A	TO-247
HUFA75645P3, HUF75645S3S	0.014 Ohm	75A	TO-220/TO-263AB
HUFA75639S3R4851	0.025 Ohm	56A 115V	TO-263AB
HUFA75639P3, HUFA75639G3, HUFA75639S3S	0.025 Ohm	56A	TO-220/TO-247/TO-263AB
HUFA75637P3, HUFA75637S3S	0.030 Ohm	44A	TO-220/TO-263AB
HUFA75631P3, HUFA75631S3ST	0.040 Ohm	33A	TO-220/TO-263AB
HUFA75631SK8	0.039 Ohm	5.5A	SO-8
HUFA75623P3, HUFA75623S3ST	0.064 Ohm	22A	TO-220/TO-263AB
HUFA75617D3, HUFA75617D3S	0.090 Ohm	16A	TO-251/TO-252
<b>150V N-Channel Standard Gate MOSFETs</b>			
HUFA75852G3	0.016 Ohm	75A	TO-247
HUFA75842P3, HUF75842S3S	0.042 Ohm	43A	TO-220/TO-263AB
HUFA75831SK8	0.095 Ohm	3A	SO-8
HUFA75829D3, HUFA75829D3S	0.110 Ohm	18A	TO-251/TO-252
HUFA75823D3, HUF75823D3S	0.150 Ohm	14A	TO-251/TO-252

For complete product information and design support, contact the Fairchild sales office in your area.

#### Americas

Customer Response Center  
Fairchild Semiconductor  
7701 Las Colinas Ridge  
Suite 400  
Irving, TX 75063  
Tel: 888-522-5372  
Fax: 979-910-8036

#### China

Fairchild Semiconductor  
Hong Kong Ltd.  
Shenzhen Representative Office  
Room 3107, Shun Hing Square  
Di Wang Commercial Centre  
5002 Shen Nan Road East  
Shenzhen, P.R.C. 518008  
Tel: 86-755-246-2088  
Fax: 86-755-246-2092

Fairchild Semiconductor  
Hong Kong Ltd.  
Shenzhen Representative Office  
Room 1110, Shanghai International  
Tradel Centre  
No. 2200 Yan An (W) Road  
Shanghai, P.R.C. 200335  
Tel: 86-21-6208-4118  
Fax: 86-21-6219-7799

#### Finland

Fairchild Semiconductor  
Itakatu 3 D 213  
FIN-00930 Helsinki  
Finland  
Tel: 358-9-341-1266  
Fax: 358-9-341-1292

#### France

Fairchild Semiconducteur SAS  
Immeuble Dublin  
2, place Gustave Eiffel  
Silic 227  
94528 Rungis Cedex  
France  
Tel: 33 (0)1 56 34 72 10  
Fax: 33 (0)1 56 34 72 11

#### Germany

Fairchild Semiconductor  
Oskar-von-Miller-Strasse 4e  
D82256 Fürstentfeldbruck  
Germany  
Tel: 49-8141-61020  
Fax: 49-8141-6102-100

#### Hong Kong

Fairchild Semiconductor  
Hong Kong Ltd.  
19/F., CMG Asia Tower  
The Gateway II, 15 Canton Road  
Tsimshatsui East, Kowloon  
Hong Kong  
Tel: 852-2722-8338  
Fax: 852-2722-8383

#### Italy

Fairchild Semiconductor Srl  
Via Carducci, 125  
20099 Sesto San Giovanni (MI)  
Italy  
Tel: 39-02-249111-1  
Fax: 39-02-26263424

#### Japan

Fairchild Semiconductor Japan Ltd.  
6F Bancho-Kaikano  
12-1 Gobancho, Chiyoda-ku  
Tokyo, 102-0076  
Japan  
Tel: 81-3-5275-8380  
Fax: 81-3-5275-8390

Fairchild Semiconductor Japan Ltd.  
Osaka Office  
8F Shin-Osaka-Meiko Building  
4-3-12, Miyahara Yodogawa-ku  
Osaka-shi, 532-0003  
Japan  
Tel: 81-6-398-3670  
Fax: 81-6-398-3680

#### Korea

Fairchild Korea Semiconductor, Ltd.  
82-3, Dodang-Dong,  
Wonmi-Ku, Puchon,  
Kyunggi-Do, Korea, 420-711  
Tel: 82-32-680-1926  
Fax: 82-32-680-1993

Fairchild Korea Semiconductor, Ltd.  
Suwon Office,  
6th Floor Song-i Building  
976-12, Youngtong-Dong,  
Paldal-Ku, Suwon,  
Kyunggi-Do, Korea, 442-470  
Tel: 82-31-205-0291-8  
Fax: 82-31-205-3352

Fairchild Korea Semiconductor, Ltd.  
Kumi Office  
5th Floor Shinlim Building  
447-2, Songjung-Dong,  
Kumi, Kyongsangbuk-Do,  
Korea, 730-090  
Tel: 82-54-457-4111  
Fax: 82-54-457-4121

#### Mexico

Fairchild Semiconductor  
Av. Vallarta #6503 Flr. 14  
Col. Cd Granjas  
Zapopan Jalisco 45010  
Mexico  
Tel: 52-3-1100017  
Fax: 52-3-1101878

#### Singapore

Fairchild Semiconductor  
Asia Pacific Pte. Ltd.  
350 Orchard Road  
#20-01/03 Shaw House  
Singapore 238868  
Tel: 65-836-0936  
Fax: 65-838-0321/3

#### Sweden

Fairchild Semiconductor  
Industrivägen 7  
SE-171 48 Solna  
Sweden  
Tel: 46-8-6515530  
Fax: 46-8-6515505

#### Taiwan

Fairchild Semiconductor  
Hong Kong Ltd. Taiwan Branch  
9/F, No. 167  
Tun Hwa North Road  
Taipei, Taiwan  
Tel: 886-2-2712-0500  
Fax: 886-2-2546-7188

#### UK

Fairchild Semiconductor Ltd.  
10 Interface Business Park  
Wootton Bassett  
Swindon SN4 8SY  
United Kingdom  
Tel: 44-1793-856856  
Fax: 44-1793-856857

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