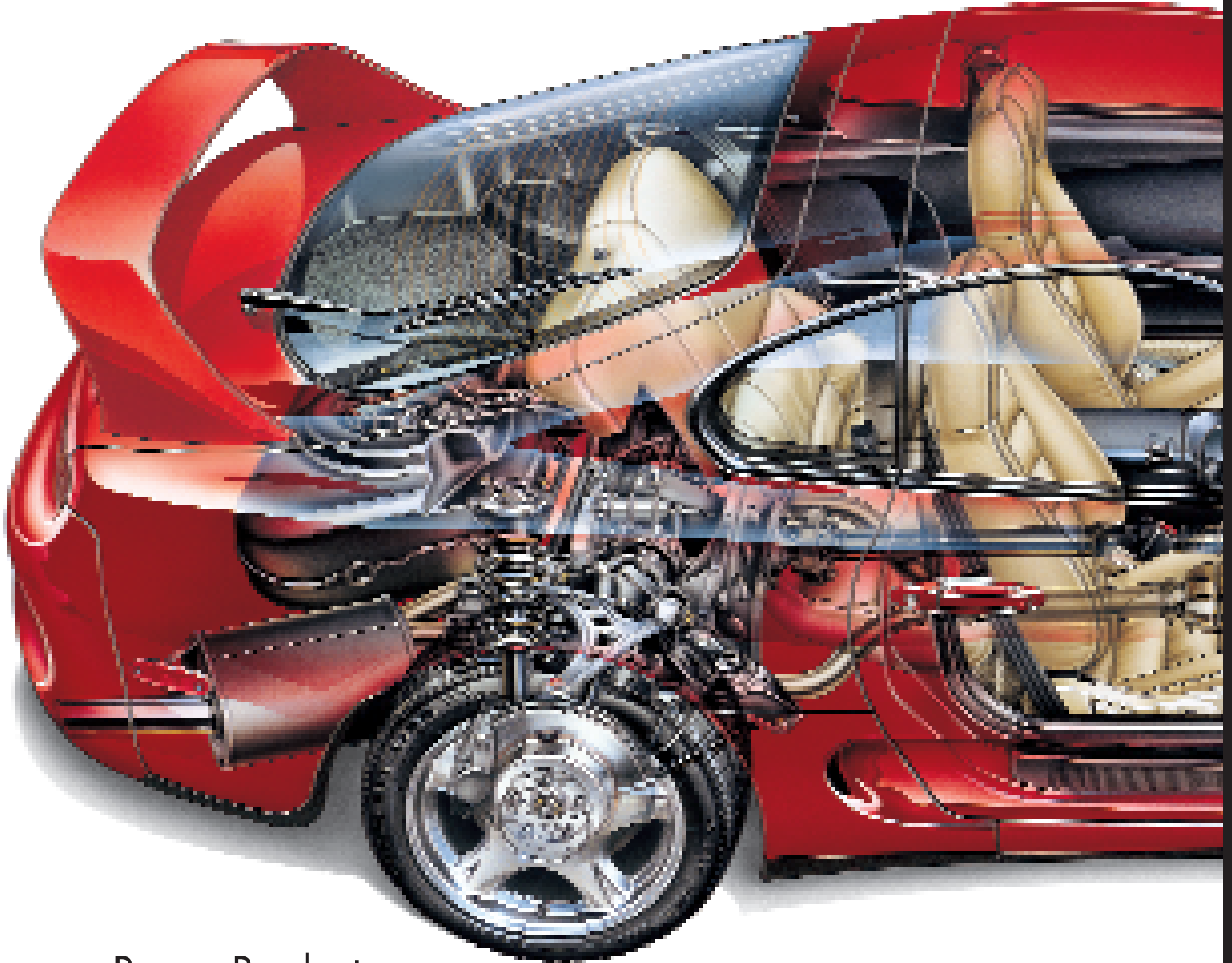


# Automotive Solutions



Power Products

Automotive Sensors

Lighting Products

Video, Imaging and Display Products

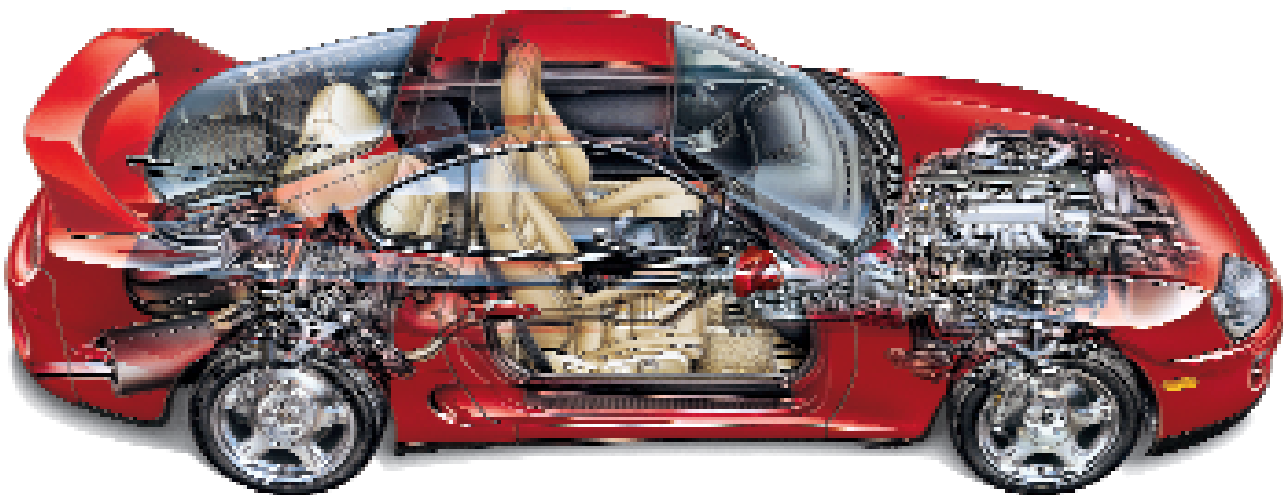
# Fairchild Semiconductor Automotive Solutions

Whether specifying a fuel ignition system for a high-performance SUV or creating dashboard illumination in a next-generation hybrid, automotive design engineers need suppliers who understand their business. With a thorough command of quality, safety and reliability standards, Fairchild distinguishes itself by providing solutions that solve complex challenges in the automotive market.

With over 35 years of design and manufacturing experience as a worldwide automotive semiconductor supplier, Fairchild's breadth of products and depth of design expertise covers the full spectrum of automotive designs. In the power arena, Fairchild's smart power switch technology combines power discrete and control IC technologies with innovative packaging to improve automotive applications, such as resistive load controls, interior heating and cooling fans, solenoid drivers and switch on coil ignition designs. Our leading-edge IGBTs and MOSFETs are designed into production and concept cars

whose demands for control and distribution of electric power call for the highest quality components. Our rectifiers, infrared and temperature sensors, LEDs, audio amplifiers, display products, operational amplifiers and encoders are engineered to satisfy the most stringent design and power requirements.

From headlight to brake-light, Fairchild will partner with you to solve your design challenges and create the most advanced vehicles in the industry. Our best-in-class products are complemented by cohesive partnerships with our power design labs worldwide. From concept to completion, schematic capture to board layout, prototype build, characterization, BOM selection and manufacturability review, Fairchild is there to help. We partner with automotive customers to optimize performance, reduce part count, reduce inventory costs, improve time-to-market and enhance overall design functionality. No wonder Fairchild is the global leader in power optimization.



Switch On Coil Ignition – Coil On Plug Ignition – Direct Fuel Injection – ABS – EHPS/EPS – Transmission – Body Load Control – Dashboard – Lighting – Video – Navigation – Ignition IGBTs – Standard IGBTs – Power MOSFETs – Rectifiers – IR Sensors – LEDs – Temperature Sensors – Video Products – LVDS Display Data Transmitters and Receivers

<b>Table of Contents:</b>	<b>Power Products</b> .....	Pages 3-8
	<b>Automotive Sensors</b> .....	Pages 9-10

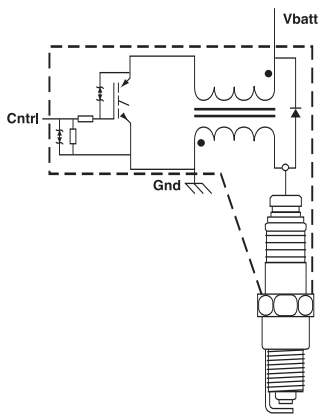
<b>Lighting Products</b> .....	Pages 11-12
<b>Video, Imaging and Display Products</b> .....	Pages 12-15

# Power Products

## Ignition Systems

## Ignition IGBTs

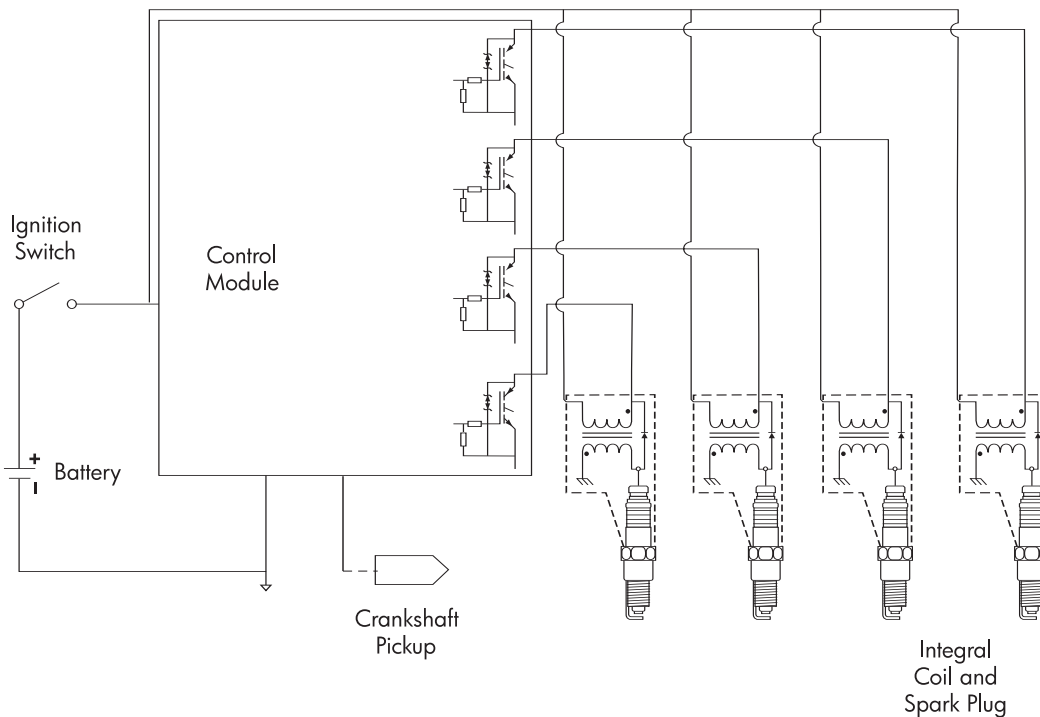
### Switch On Coil Ignition System



Part Number	Clamping Voltage Typ (V)	I <sub>c</sub> @ 110°C	V <sub>CE(sat)</sub> Typ (V)		SCIS Energy @ 25°C Min (mJ)	Package
			Typ (V)	Test Condition		
ISL9V2040D3S	400	10	1.45	6A, 4V, 25°C	200	TO-252 (DPAK)
ISL9V2040P3	400	10	1.45	6A, 4V, 25°C	200	TO-220
ISL9V2040S3S	400	10	1.45	6A, 4V, 25°C	200	TO-263 (D <sup>2</sup> PAK)
ISL9V2140S3S*	400	10	1.45	6A, 4V, 25°C	200	TO-263 (D <sup>2</sup> PAK)
ISL9V3036D3S	360	17	1.25	6A, 4V, 25°C	300	TO-252 (DPAK)
ISL9V3036P3	360	17	1.25	6A, 4V, 25°C	300	TO-220
ISL9V3036S3S	360	17	1.25	6A, 4V, 25°C	300	TO-263 (D <sup>2</sup> PAK)
ISL9V3040D3S	400	17	1.25	6A, 4V, 25°C	300	TO-252 (DPAK)
ISL9V3040P3	400	17	1.25	6A, 4V, 25°C	300	TO-220
ISL9V3040S3	400	17	1.25	6A, 4V, 25°C	300	TO-262 (I <sup>2</sup> PAK)
ISL9V3040S3S	400	17	1.25	6A, 4V, 25°C	300	TO-263 (D <sup>2</sup> PAK)
ISL9V5036P3	360	31	1.17	10A, 4V, 25°C	500	TO-220
ISL9V5036S3	360	31	1.17	10A, 4V, 25°C	500	TO-262 (I <sup>2</sup> PAK)
ISL9V5036S3S	360	31	1.17	10A, 4V, 25°C	500	TO-263 (D <sup>2</sup> PAK)
ISL9V5045P3	450	31	1.17	10A, 4V, 25°C	500	TO-220
ISL9V5045S3	450	31	1.17	10A, 4V, 25°C	500	TO-262 (I <sup>2</sup> PAK)
ISL9V5045S3S	450	31	1.17	10A, 4V, 25°C	500	TO-263 (D <sup>2</sup> PAK)

\* Sampling soon available

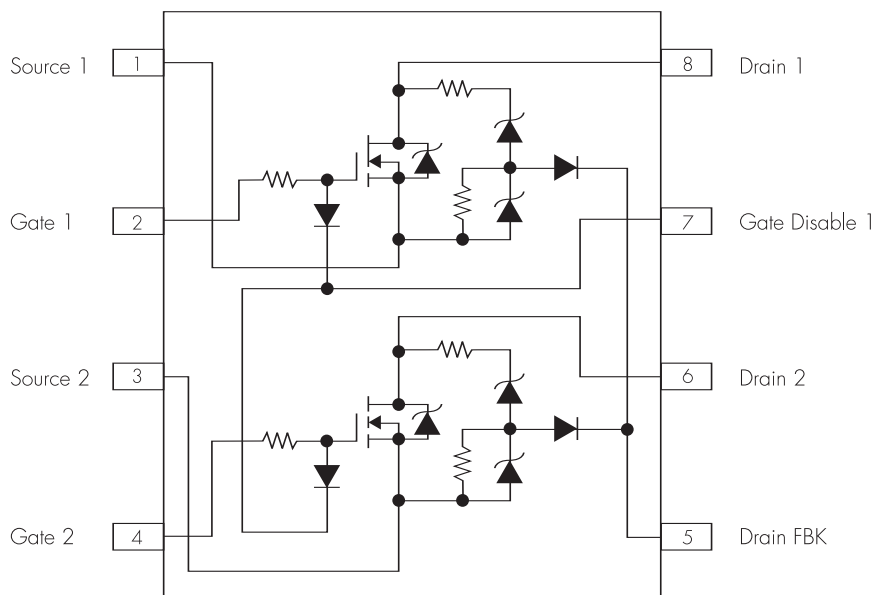
### Coil On Plug Ignition System



# Power Products

## Injector Driver

Part Number	Gate Drive	BV <sub>DSS</sub> Min (V)	Config	R <sub>DS(ON)</sub> Max (Ω) @ V <sub>GS</sub> =10V	R <sub>DS(ON)</sub> Max (Ω) @ V <sub>GS</sub> =5V	Q <sub>g</sub> Typ (nC) @ V <sub>GS</sub> =10V	I <sub>D</sub> (A)	P <sub>D</sub> (W)	Package
FDSS2407	Logic Level	62	Dual	0.110	0.132	4.3	3.3	2.3	SO-8

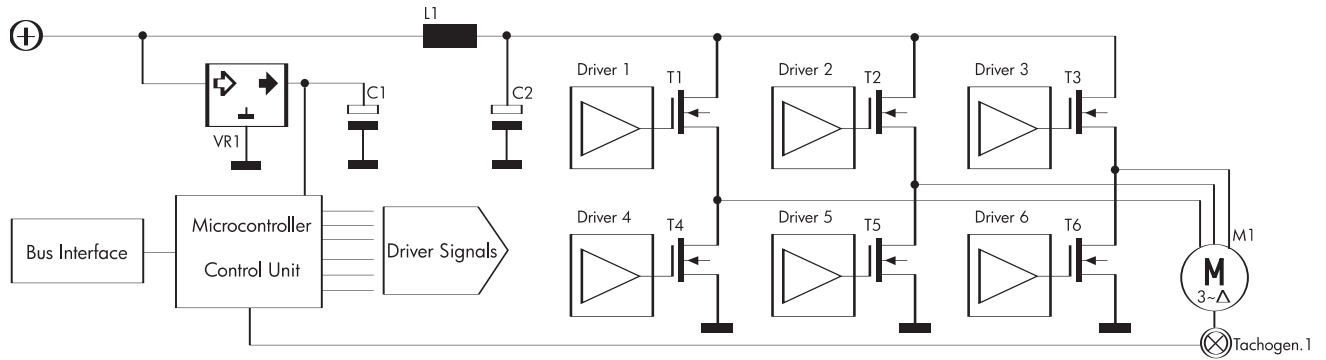


### Injector Application Specific MOSFET

This space saving application specific MOSFET provides added functions:

1. A drain-source voltage feedback signal when the voltage is above 62 V
2. A gate drive disable function, eliminating external discrete circuitry

## EHPS/EPS

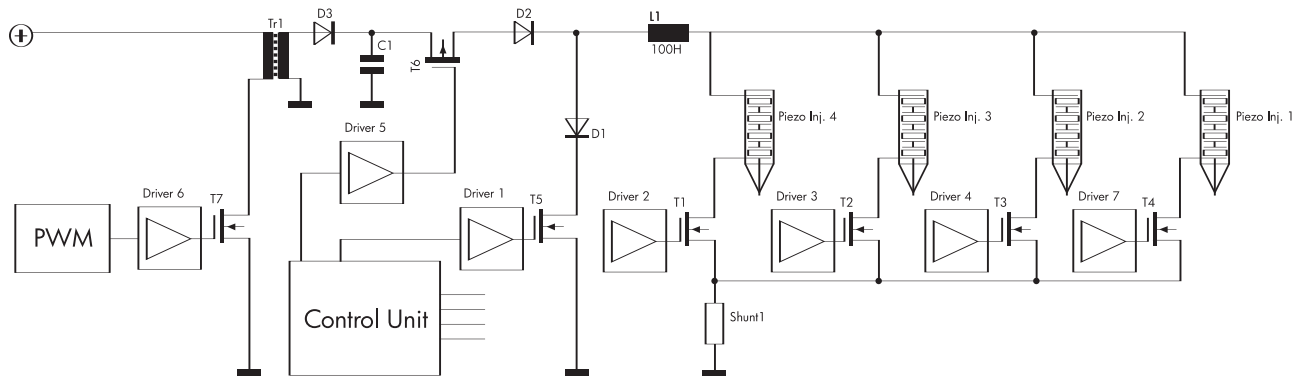


## PowerTrench® MOSFETs

Part Number	Gate Drive	BV <sub>DSS</sub> Min (V)	Config	R <sub>DS(ON)</sub> Max (Ω) @ V <sub>GS</sub> =		Qg Typ (nC) @ V <sub>GS</sub> =10V	I <sub>o</sub> (A)	P <sub>o</sub> (W)	Package
				10V	5V				
FDB026AN03L*	Logic Level	30	Single	0.0023	0.0026@4.5V	175	80*	250	TO-263 (D <sup>2</sup> PAK)
FDB044AN03L*	Logic Level	30	Single	0.0039	0.0044@4.5V	95	80*	160	TO-263 (D <sup>2</sup> PAK)
FDI044AN03L*	Logic Level	30	Single	0.0039	0.0044@4.5V	95	80*	160	TO-262 (I <sup>2</sup> PAK)
FDD044AN03L	Logic Level	30	Single	0.0039	0.0045@4.5V	91	35	160	TO-252 (DPAK)
FDU044AN03L	Logic Level	30	Single	0.0039	0.0045@4.5V	91	35	160	TO-251 (IPAK)
FDB028AN04*	Standard Gate	40	Single	0.0028	-	180	80	255	TO-263 (D <sup>2</sup> PAK)
FDPO28AN04*	Standard Gate	40	Single	0.0028	-	180	80	255	TO-220

\* In development, engineering samples available

## Piezo Activated Direct Injection



## IGBT

Part Number	$V_{CES}$ Min (V)	$I_c@100^\circ\text{C}$	$V_{CE(sat)}$ Typ (V)	$t_f$ Typ (ns)	Package	Applications Usage
HGT1S7N60A4DS	600	14	1.9	45	TO-263 (D <sup>2</sup> PAK)	T1, T2, T3, T4
HGT1S7N60A4S	600	14	1.9	45	TO-263 (D <sup>2</sup> PAK)	T1, T2, T3, T4
FGD3N60LSD	600	3	1.2	800	TO-252 (DPAK)	T1, T2, T3, T4

## Ultrafast Rectifier

Part Number	Configuration	$V_{RRM}$ (V)	$I_F$ (AV) (A)	$V_F$ Max (V)	$t_{rr}$ Max (ns)	$I_{RM}$ or $I_R$ Max (uA)	Package	Applications Usage
RURD420S	Single	200	4	1	30	100	TO-252 (DPAK)	D1, D2, D3
FFB06U40S	Single	400	6	1.4	50	20	TO-263 (D <sup>2</sup> PAK)	D1, D2, D3
RURD660S	Single	600	6	1.5	55	100	TO-252 (DPAK)	D1, D2, D3
RURP860	Single	600	8	1.5	60	100	TO-220	D1, D2, D3

## Hyperfast Rectifier

Part Number	Configuration	$V_{RRM}$ (V)	$I_F$ (AV) (A)	$V_F$ Max (V)	$t_{rr}$ Max (ns)	$I_{RM}$ or $I_R$ Max (uA)	Package	Applications Usage
RHRD660S3S	Single	600	6	2.1	30	100	TO-252 (DPAK)	D1, D2, D3

## High Voltage MOSFET

Part Number	$BV_{DSS}$ Min (V)	Config	$R_{DS(ON)}$ Max ( $\Omega$ ) @ $V_{GS}=10\text{V}$	$Q_g$ Typ (nC) @ $V_{GS}=5\text{V}$	$I_b$ (A)	$P_D$ (W)	Package	Applications Usage
SFP9640	-200	Single - P-Channel	0.50	46	11	123	TO-220	T6
FQB9P25	-250	Single - P-Channel	0.62	29	9.4	120	TO-263 (D <sup>2</sup> PAK)	T6
IRFW644B	250	Single - N-Channel	0.28	47	14	139	TO-263 (D <sup>2</sup> PAK)	T1, T2, T3, T4
FQB14N30	300	Single - N-Channel	0.29	30	9.1	147	TO-263 (D <sup>2</sup> PAK)	T1, T2, T3, T4

Part Number	Gate Drive	$V_{OSS}$ Min (V)	Config	$R_{DS(ON)}$ Max ( $\Omega$ ) @ $V_{GS}=10V$	$R_{DS(ON)}$ Max ( $\Omega$ ) @ $V_{GS}=5V$	$Q_g$ Typ (nC) @ $V_{GS}=10V$	$I_b$ (A)	$P_D$ (W)	Package
FDB026AN03L*	Logic Level	30	Single	0.0023	0.0026@4.5V	175	80*	250	TO-263 (D <sup>2</sup> PAK)
FDB044AN03L*	Logic Level	30	Single	0.0039	0.0044@4.5V	95	80*	160	TO-263 (D <sup>2</sup> PAK)
FDI044AN03L*	Logic Level	30	Single	0.0039	0.0044@4.5V	95	80*	160	TO-262 (I <sup>2</sup> PAK)
FDD044AN03L	Logic Level	30	Single	0.0039	0.0045@4.5V	91	35	160	TO-252 (DPAK)
FDU044AN03L	Logic Level	30	Single	0.0039	0.0045@4.5V	91	35	160	TO-251 (IPAK)
FDB068AN03L*	Logic Level	30	Single	0.0057	0.0068@4.5V	43	80*	80	TO-263 (D <sup>2</sup> PAK)
FDI068AN03L*	Logic Level	30	Single	0.0057	0.0068@4.5V	43	80*	80	TO-262 (I <sup>2</sup> PAK)
FDD068AN03L	Logic Level	30	Single	0.0057	0.0068@4.5V	46	35	80	TO-252 (DPAK)
FDU068AN03L	Logic Level	30	Single	0.0057	0.0068@4.5V	46	35	80	TO-251 (IPAK)
FDB028AN04*	Standard Gate	40	Single	0.0028	-	180	80	255	TO-263 (D <sup>2</sup> PAK)
FDPO28AN04*	Standard Gate	40	Single	0.0028	-	180	80	255	TO-220
FDD052AN04*	Standard Gate	40	Single	0.0052	-	110	35	160	TO-252 (DPAK)
FDB088AN04*	Standard Gate	40	Single	0.0088	-	52	75	90	TO-263 (D <sup>2</sup> PAK)
FDD090AN04*	Standard Gate	40	Single	0.009	-	52	35	90	TO-252 (DPAK)
HUFA75345P3	Standard	55	Single	0.007	-	275	75	325	TO-220
HUFA75345G3	Standard	55	Single	0.007	-	275	75	325	TO-247
HUFA75345S3S	Standard	55	Single	0.007	-	275	75	325	TO-263 (D <sup>2</sup> PAK)
HUFA75344P3	Standard	55	Single	0.008	-	210	75	285	TO-220
HUFA75344G3	Standard	55	Single	0.008	-	210	75	285	TO-247
HUFA75344S3S	Standard	55	Single	0.008	-	210	75	285	TO-263 (D <sup>2</sup> PAK)
HUFA75343P3	Standard	55	Single	0.009	-	205	75	270	TO-220
HUFA75343G3	Standard	55	Single	0.009	-	205	75	270	TO-247
HUFA75343S3S	Standard	55	Single	0.009	-	205	75	270	TO-263 (D <sup>2</sup> PAK)
HUFA75339P3	Standard	55	Single	0.012	-	130	75	200	TO-220
HUFA75339G3	Standard	55	Single	0.012	-	130	75	200	TO-247
HUFA75339S3S	Standard	55	Single	0.012	-	130	75	200	TO-263 (D <sup>2</sup> PAK)
FDB035AN06A0	Standard Gate	60	Single	0.0035	-	95	80	310	TO-263 (D <sup>2</sup> PAK)
FDI038AN06A0	Standard Gate	60	Single	0.0038	-	95	80	310	TO-262 (I <sup>2</sup> PAK)
FDPO38AN06A0	Standard Gate	60	Single	0.0038	-	95	80	310	TO-220
FDB050AN06A0	Standard Gate	60	Single	0.005	-	61	80	245	TO-263 (D <sup>2</sup> PAK)
FDPO50AN06A0	Standard Gate	60	Single	0.005	-	61	80	245	TO-220
FDB070AN06A0	Standard Gate	60	Single	0.007	-	51	80	175	TO-263 (D <sup>2</sup> PAK)
FDPO70AN06A0	Standard Gate	60	Single	0.007	-	51	80	175	TO-220
FDB10AN06A0	Standard Gate	60	Single	0.0105	-	28	75	135	TO-263 (D <sup>2</sup> PAK)
FDPI0AN06A0	Standard Gate	60	Single	0.0105	-	28	75	135	TO-220
FDD10AN06A0	Standard Gate	60	Single	0.0105	-	28	50	135	TO-252 (DPAK)
FDB14AN06LA0	Logic Level	60	Single	0.0116	0.0146	24	60	125	TO-263 (D <sup>2</sup> PAK)
FDPI14AN06LA0	Logic Level	60	Single	0.0116	0.0146	25	50	125	TO-220
FDD14AN06LA0	Logic Level	60	Single	0.011	0.014	25	50	125	TO-252 (DPAK)
FDB13AN06A0	Standard Gate	60	Single	0.0135	-	22	62	115	TO-263 (D <sup>2</sup> PAK)
FDPI3AN06A0	Standard Gate	60	Single	0.0135	-	22	62	115	TO-220
FDD13AN06A0	Standard Gate	60	Single	0.0135	-	22	50	115	TO-252 (DPAK)
HUFA76437P3	Logic Level	60	Single	0.014	0.017	71	64	155	TO-220
HUFA76437S3S	Logic Level	60	Single	0.014	0.017	71	64	155	TO-263 (D <sup>2</sup> PAK)
HUFA76432P3	Logic Level	60	Single	0.017	0.019	53	55	130	TO-220
HUFA76432S3S	Logic Level	60	Single	0.017	0.019	53	55	130	TO-263 (D <sup>2</sup> PAK)
FDP24AN06LA0	Logic Level	60	Single	0.019	0.024	16	36	75	TO-220
FDB24AN06LA0	Logic Level	60	Single	0.019	0.024	16	36	75	TO-263 (D <sup>2</sup> PAK)
FDD24AN06LA0	Logic Level	60	Single	0.019	0.024	16	36	75	TO-252 (DPAK)
FDB20AN06A0	Standard Gate	60	Single	0.02	-	15	45	90	TO-263 (D <sup>2</sup> PAK)
FDP20AN06A0	Standard Gate	60	Single	0.02	-	15	45	90	TO-220
FDD20AN06A0	Standard Gate	60	Single	0.02	-	15	45	90	TO-252 (DPAK)
HUFA76423P3	Logic Level	60	Single	0.03	0.035	34	33	85	TO-220
HUFA76423S3S	Logic Level	60	Single	0.03	0.035	34	33	85	TO-263 (D <sup>2</sup> PAK)
HUFA76423D3	Logic Level	60	Single	0.032	0.037	34	20	85	TO-251 (IPAK)
HUFA76423D3S	Logic Level	60	Single	0.032	0.037	34	20	85	TO-252 (DPAK)
HUFA76419P3	Logic Level	60	Single	0.035	0.04	28	27	75	TO-220
HUFA76419S3S	Logic Level	60	Single	0.035	0.04	28	27	75	TO-263 (D <sup>2</sup> PAK)
HUFA76419D3	Logic Level	60	Single	0.037	0.043	28	20	75	TO-251 (IPAK)
HUFA76419S3S	Logic Level	60	Single	0.037	0.043	28	20	75	TO-252 (DPAK)
HUFA76413P3	Logic Level	60	Single	0.056	0.049	20	22	60	TO-220
HUFA76413D3	Logic Level	60	Single	0.056	0.049	20	20	60	TO-251 (IPAK)
HUFA76413D3S	Logic Level	60	Single	0.056	0.049	20	20	60	TO-252 (DPAK)
HUFA76413DK8T	Logic Level	60	Dual	0.056	0.049	23	4.8	2.5	SO-8

**Power MOSFETS**

Part Number	Gate Drive	$V_{DSS}$ Min (V)	Config	$R_{DS(ON)}$ Max ( $\Omega$ ) @ $V_{GS}=$ 10V      5V		$Q_g$ Typ (nC) @ $V_{GS}=10V$	$I_D$ (A)	$P_D$ (W)	Package
HUFA76409P3	Logic Level	60	Single	0.07	0.062	15	17	49	TO-220
HUFA76409D3	Logic Level	60	Single	0.071	0.063	15	17	49	TO-251 (IPAK)
HUFA76409D3S	Logic Level	60	Single	0.071	0.063	15	17	49	TO-252 (DPAK)
HUFA76407DK8T	Logic Level	60	Dual	0.105	0.09	11	3.5	2.5	SO-8
FDD45AN06LA0	Logic Level	60	Single	0.036	0.045	8.3	22	55	TO-252 (DPAK)
FDD107AN06LA0	Logic Level	60	Single	0.091	0.107	4.2	10	25	TO-252 (DPAK)
HUFA76404DK8T	Logic Level	62	Dual	0.132	0.11	5	3.6	2.5	SO-8
FDH038AN08A1	Standard Gate	75	Single	0.0038	-	125	80	450	TO-247   Wafer
FDB045AN08A0	Standard Gate	75	Single	0.0045	-	92	80	310	TO-263 (D <sup>2</sup> PAK)
FDP047AN08A0	Standard Gate	75	Single	0.0047	-	92	80	310	TO-220
FDH047AN08A0	Standard Gate	75	Single	0.0047	-	92	80	310	TO-247
FDB060AN08A0	Standard Gate	75	Single	0.006	-	99	80	285	TO-263 (D <sup>2</sup> PAK)
FDP060AN08A0	Standard Gate	75	Single	0.006	-	99	80	285	TO-220
FDH3632	Standard Gate	75	Single	0.009	-	84	80	310	TO-247
FDB090AN08A0*	Standard Gate	75	Single	0.009	-	42	80	210	TO-263 (D <sup>2</sup> PAK)
FDB16AN08A0	Standard Gate	75	Single	0.016	-	28	58	135	TO-263 (D <sup>2</sup> PAK)
FDP16AN08A0	Standard Gate	75	Single	0.016	-	28	58	135	TO-220
FDD16AN08A0	Standard Gate	75	Single	0.016	-	31	50	135	TO-252 (DPAK)
FDB3632	Standard Gate	100	Single	0.009	-	84	80	310	TO-263 (D <sup>2</sup> PAK)
FDI3632	Standard Gate	100	Single	0.009	-	84	80	310	TO-262 (I <sup>2</sup> PAK)
FDP3632	Standard Gate	100	Single	0.009	-	84	80	310	TO-220
HUFA76645P3	Logic Level	100	Single	0.015	0.014	153	75	310	TO-220
HUFA76645S3S	Logic Level	100	Single	0.015	0.014	153	75	310	TO-263 (D <sup>2</sup> PAK)
FDB35AN10L*	Logic Level	100	Single	0.032	0.035	46	36	115	TO-263 (D <sup>2</sup> PAK)
FDD50AN10L*	Logic Level	100	Single	0.045	0.05	32	26	85	TO-252 (DPAK)
FDB3652	Standard Gate	100	Single	0.016	-	44	61	150	TO-263 (D <sup>2</sup> PAK)
FDI3652	Standard Gate	100	Single	0.016	-	44	61	150	TO-262 (I <sup>2</sup> PAK)
FDP3652	Standard Gate	100	Single	0.016	-	44	61	150	TO-220
FDS3672	Standard Gate	100	Single	0.022	-	28	7.5	2.5	SO-8
HUFA76639P3	Logic Level	100	Single	0.027	0.026	86	50	180	TO-220
HUFA76639S3S	Logic Level	100	Single	0.027	0.026	86	50	180	TO-263 (D <sup>2</sup> PAK)
FDD3672	Standard Gate	100	Single	0.028	-	24	44	135	TO-252 (DPAK)
FDP3672	Standard Gate	100	Single	0.033	-	28	41	135	TO-220
FDS3682	Standard Gate	100	Single	0.035	-	19	6	2.5	SO-8
FDB3682	Standard Gate	100	Single	0.036	-	18.5	32	95	TO-263 (D <sup>2</sup> PAK)
FDP3682	Standard Gate	100	Single	0.036	-	18.5	32	95	TO-220
FDD3682	Standard Gate	100	Single	0.036	-	18.5	32	95	TO-252 (DPAK)
FDS3692	Standard Gate	100	Single	0.06	-	11	4.5	2.5	SO-8
FDS3992	Standard Gate	100	Dual	0.062	-	11	4.5	2.5	SO-8
HUFA76619D3	Logic Level	100	Single	0.087	0.085	29	18	75	TO-251 (IPAK)
HUFA76619D3S	Logic Level	100	Single	0.087	0.085	29	18	75	TO-252 (DPAK)
HUFA75617D3	Standard	100	Single	0.09	-	39	16	64	TO-251 (IPAK)
HUFA75617D3S	Standard	100	Single	0.09	-	39	16	64	TO-252 (DPAK)
HUFA76609D3	Logic Level	100	Single	0.165	0.16	16	10	49	TO-251 (IPAK)
HUFA76609D3S	Logic Level	100	Single	0.165	0.16	16	10	49	TO-252 (DPAK)
FDB2532	Standard Gate	150	Single	0.016	-	86	79	310	TO-263 (D <sup>2</sup> PAK)
FDI2532	Standard Gate	150	Single	0.016	-	86	79	310	TO-262 (I <sup>2</sup> PAK)
FDP2532	Standard Gate	150	Single	0.016	-	86	79	310	TO-220
FDB2552	Standard Gate	150	Single	0.036	-	41	37	150	TO-263 (D <sup>2</sup> PAK)
FDP2552	Standard Gate	150	Single	0.036	-	41	37	150	TO-220
FDB42AN15A0	Standard Gate	150	Single	0.042	-	30	35	150	TO-263 (D <sup>2</sup> PAK)
FDP42AN15A0	Standard Gate	150	Single	0.042	-	30	35	150	TO-220
FDS2572	Standard Gate	150	Single	0.047	-	29	4.9	2.5	SO-8
FDB2572	Standard Gate	150	Single	0.056	-	27	29	135	TO-263 (D <sup>2</sup> PAK)
FDD2572	Standard Gate	150	Single	0.056	-	27	29	135	TO-252 (DPAK)
FDP2572	Standard Gate	150	Single	0.056	-	27	29	135	TO-220
FDU2572	Standard Gate	150	Single	0.056	-	27	29	135	TO-251 (IPAK)
FDS2582	Standard Gate	150	Single	0.066	-	11	4.5	2.5	SO-8
FDD2582	Standard Gate	150	Single	0.066	-	19	21	310	TO-252 (DPAK)
HUFA75831SK8T	Standard	150	Single	0.095	-	80	3	2.5	SO-8
FDP120AN15A0	Standard Gate	150	Single	0.12	-	11.2	14	65	TO-220
FDD120AN15A0	Standard Gate	150	Single	0.12	-	11.2	14	65	TO-252 (DPAK)

\* In development, engineering samples available



# Automotive Sensors

## Infrared Sensing

### Plastic Silicon OPTOLOGIC® Photosensors

Part Number	Test Conditions $\lambda_p$ (nm)	E++ (mW/cm <sup>2</sup> ) Max	E+/E- Typ	V <sub>OL</sub> (V) Max	I <sub>CC</sub> (mA) Max	Sensor Type
<b>Sidelooker OPTOLOGIC Package</b>						
QSE156	880 AlGaAs	0.250	1.2	0.40	5	Buffer Totem Pole
QSE157	880 AlGaAs	0.250	1.2	0.40	5	Inverter Totem Pole
QSE158	880 AlGaAs	0.250	1.2	0.40	5	Buffer Open Collector
QSE159	880 AlGaAs	0.250	1.2	0.40	5	Inverter Open Collector

### Reflective Infrared Switches

Part Number	Test Conditions			I <sub>C (ON)</sub> (mA) Min	BV <sub>CEO</sub> (V) Min	Output	Wavelength $\lambda_p$ (nm)
	I <sub>r</sub> (mA)	V <sub>CC</sub> (V)	Sensor to Surface Distance (inch)				
<b>Reflective Arrowhead with Dust Cover (Focused)</b>							
QRB1113	40	5	0.150	0.20	30	Phototransistor	940
QRB1114	40	5	0.150	0.60	30	Phototransistor	940
<b>Reflective Focusing Sensor PCB Mount</b>							
QRE00034	20	10	0.160	0.16	30	Phototransistor	940
<b>Reflective Non-focusing Sensor PCB Mount</b>							
QRD1113	20	5	0.050	0.30	30	Phototransistor	880
QRD1114	20	5	0.050	1.00	30	Phototransistor	880
QRD1313	20	5	0.050	10.00	15	Photodarlington	880
<b>Reflective Surface Mount (Non-focused)</b>							
QRE1113GR	20	5	0.040	0.15	30	Phototransistor	940
<b>Reflective Arrowhead with Dust Cover, Wires (Focused)</b>							
QRB1133	40	5	0.150	0.20	30	Phototransistor	940
QRB1134	40	5	0.150	0.60	30	Phototransistor	940

## Temperature Sensors

### Analog Output (FM20/FM50)

Part Number	Package	Packing Method	VCC Range (V)	Temp Range (°C)	Sensor Gain (mV/°C)	Accuracy (°C)	Nonlinearity (°C)		Quiescent Current (µA)		O/P Current (µA) (I <sub>OH</sub> /I <sub>OL</sub> )
							Min	Max	Min	Max	
FM20P5X	SC-70-5	3000 units in T&R	2.4 to 6.0	-55 to +130	-11.77	± 2	-5	+2	5	12	20/1
FM20S3X	SOT-23-3	3000 units in T&R	2.4 to 6.0	-55 to +130	-11.77	± 2	-5	+2	5	12	20/1
FM50S3X	SOT-23-3	3000 units in T&R	2.4 to 6.0	-40 to +125	10 ± 0.2	± 1	-0.8	+0.8	-	130	50/25

### Digital Output (FM75)

Part Number	Package	Packing Method	VCC Range (V)	Temp Range (°C)	Resolution (No. of Bits)	Accuracy (°C)	Conversion Time (ms)	Quiescent Current (µA) Max
FM75MB8	SOP-8	95 units in Tube	2.7 to 5.5	-40 to +125	9/10/11/12 *	± 2	160	500
FM75M8X	SOP-8	2500 units in T&R	2.7 to 5.5	-40 to +125	9/10/11/12 *	± 2	160	500
FM75MM8	MSOP-8	95 Units in Tube	2.7 to 5.5	-40 to +125	9/10/11/12 *	± 2	160	500
FM75MM8X	MSOP-8	4000 units in T&R	2.7 to 5.5	-40 to +125	9/10/11/12 *	± 2	160	500

\* User programmable

# Lighting Products

## Instrumentation/Dashboard

### LEDs

Part Number UOM:	Number of Colors	Source		Forward Voltage V <sub>f</sub>	Peak Wavelength nm	Luminous Intensity (I <sub>v</sub> )	Viewing Angle deg
		Color	Brightness	Max V		Typ mcd	
<b>PLCC-2</b>							
QTLP670C-2	Single	HER	Standard	2.8	635	10	120
QTLP670C-3	Single	Yellow	Standard	2.8	585	10	120
QTLP670C-4	Single	Green	Standard	2.8	565	25	120
QTLP670C-7	Single	AlGaAs Red	Standard	2.4	660	40	120
QTLP670C-9	Single	AlGaAs Red	Standard	2.4	660	40	120
QTLP670C-B	Single	Blue	Standard	4.5	430	30	120
QTLP670C-AG	Single	AllnGaP Yellow- Green	Super Bright	2.4	575	30	120
QTLP670C-E	Single	AllnGaP Orange	Super Bright	2.8	620	65	120
QTLP670C-IB	Single	InGa <sub>N</sub> / Sapphire Blue	Super Bright	4	470	60	120
QTLP670C-IG	Single	InGa <sub>N</sub> / SiC TRUE Green	Super Bright	4	520	115	120
QTLP670C-O	Single	AllnGaP Yellow- Orange	Super Bright	2.4	610	65	120
QTLP670C-R	Single	AllnGaP Red	Super Bright	2.4	630	65	120
QTLP670C-S	Single	AllnGaP Red	Super Bright	2.8	640	65	120
QTLP670C-Y	Single	AllnGaP Yellow	Super Bright	2.8	590	65	120
<b>PLCC-4</b>							
QTLP670C-23	Bicolor	HER/ Yellow	Standard	2.8/ 2.8	585 635	10/ 5	120
QTLP670C-24	Bicolor	HER/ Green	Standard	2.8/ 2.8	565 635	25 15	120
QTLP670C-34	Bicolor	Yellow/ Green	Standard	2.8/ 2.8	565 585	5/ 25	120
QTLP670C-74	Bicolor	AlGaAs Red/ Green	Standard	2.4/ 2.8	565 660	20/ 25	120
QTLP670C-RAG	Bicolor	AllnGaP Red/ Yellow- Green	Super Bright	2.4/ 2.4	630/ 575	55/ 25	120
QTLP670CRY	Bicolor	AllnGaP Red/ Yellow	Super Bright	2.4	590 630	55/ 55	120
QTLP673CE	Single	AllnGaP Orange	Ultra Bright	2.3	620	500	120
QTLP673CIB	Single	InGa <sub>N</sub> Blue	Ultra Bright	3.6	465	220	120
QTLP673CIC	Single	InGa <sub>N</sub> Cyan	Ultra Bright	3.6	505	700	120
QTLP673CIG	Single	InGa <sub>N</sub> True Green	Ultra Bright	3.6	520	700	120
QTLP673CO	Single	AllnGaP Yellow-Orange	Ultra Bright	2.3	610	500	120
QTLP673CR	Single	AllnGaP Red	Ultra Bright	2.3	630	500	120
QTLP673CY	Single	AllnGaP Red	Ultra Bright	2.3	590	500	120

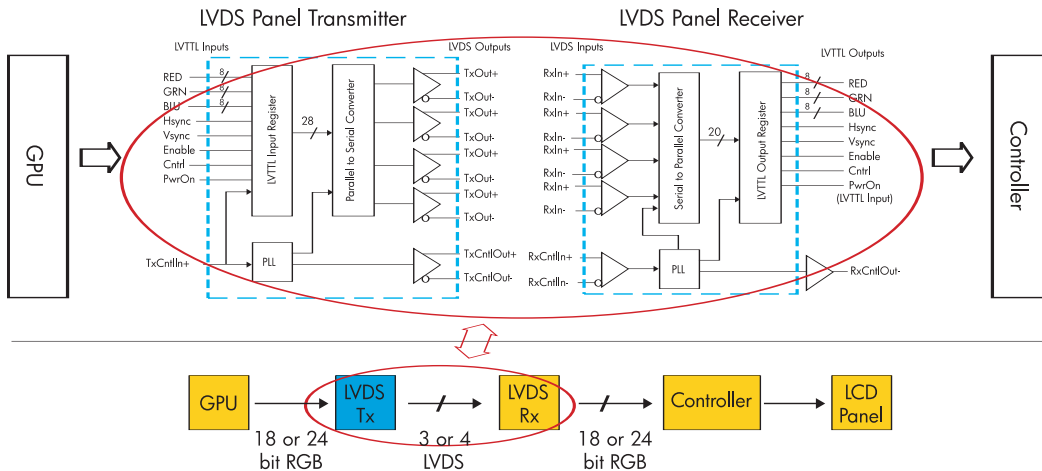
## Rear Lighting/CHMSL

### LEDs

Part Number	Number of Colors	Source		Forward Voltage V <sub>f</sub> Max	Peak Wavelength	Luminous Intensity (I <sub>v</sub> ) Typ	Viewing Angle
		Color	Brightness				
4-pin Power							
QTLP320C-E	Single	Orange	Super Bright	2.9	620	900	70
QTLP320C-R	Single	Red	Super Bright	2.9	630	900	70
QTLP320C-Y	Single	Yellow	Super Bright	2.9	590	900	70

# Video, Imaging and Display Products

## Display Data Transmission



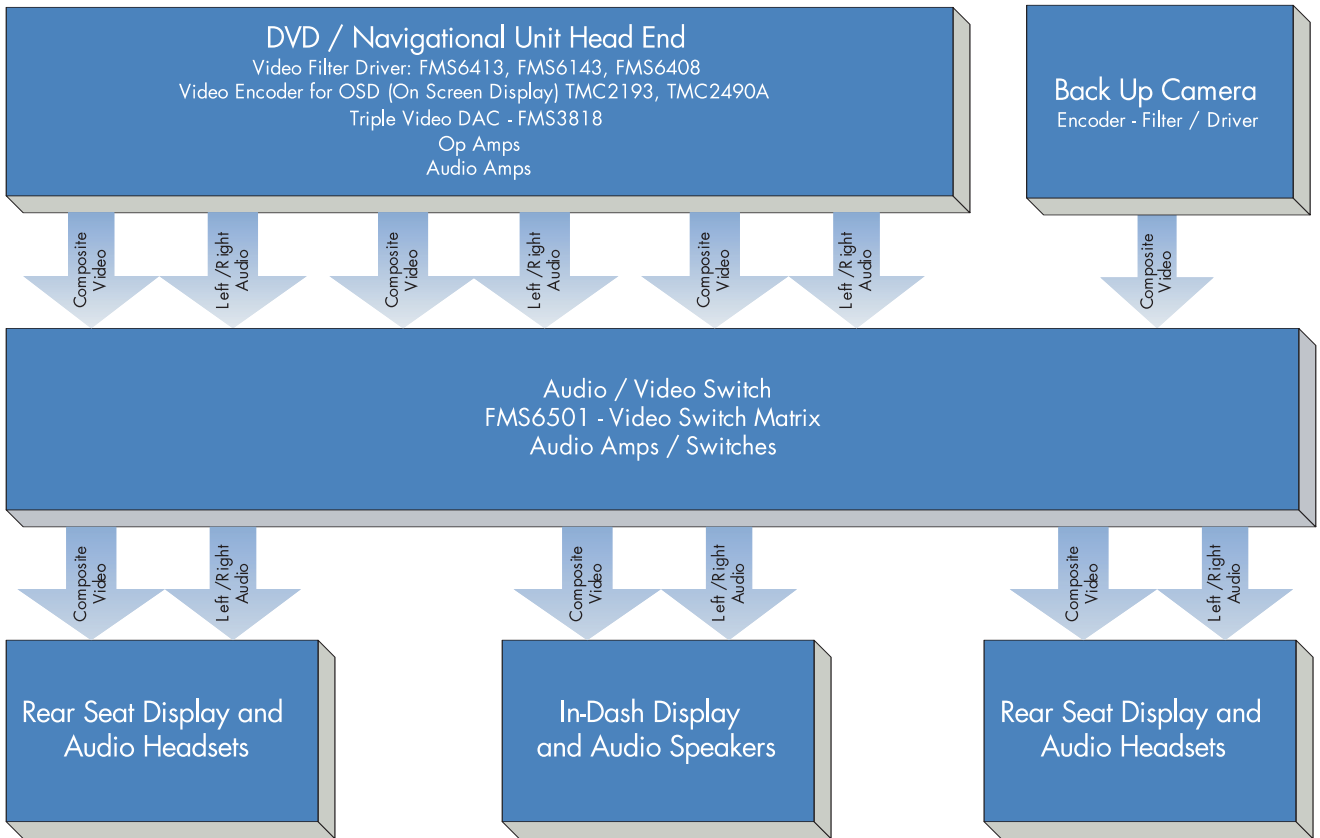
## LVDS Data Transmitters and Receivers

Resolution Name/Pixels	SVGA 800x600	XGA 1024x768	WXGA 1280x768	SXGA 1280x1024	SXGA+ 1400x1050	WSXGA 1680x1050	UXGA 1600x1200	WUXGA 1920x1200	QXGA 2048x1536
FIN3383	X	X							
FIN3385			X						
FIN3385 (x2)				X	X	X	X	X	X

## LVDS Serializers

Part Number	Product Description	Number of Drivers	Number of Receivers	Packages	Lead Free
FIN3383	Low Voltage 28 Bit 20-66 MHz Flat Panel Display Link Serializers	4	28	TSSOP	No
FIN3385	Low Voltage 28 Bit 20-85 MHz Flat Panel Display Link Serializers	4	28	TSSOP	No

## In-Cabin Entertainment



## Audio Amplifiers

Part Number	Package	Vcc		Output Power (Watts)	# of Channels	Auxiliary Headphone Driver	Mute	Thermal Shutdown	Load Mode	Shut down
		Min(V)	Max(V)							
FAN7000D	SSOP	1.8	4	0.04	2	Yes	Yes	No	SE	Yes
FAN7005	SOIC, MSOP	2.7	5.5	0.2	2	Yes	No	Yes	SE	Yes
FAN7021	SOIC	2	6	1	1	No	No	Yes	BTL	Yes
FAN7023	MSOP, MLP, SOIC	2	6	1	1	No	No	Yes	BTL	Yes
FAN7031	eTSSOP	2.7	5.5	2	2	Yes	No	Yes	BTL	Yes
FAN7033MP	MLP	2.7	5.5	2	2	Yes	No	Yes	BTL	Yes
FAN7040	SOIC	4.5	18	3	1	Yes	Yes	Yes	BTL	Yes

## Video Switch Matrix

Part Number	Number of Inputs	Number of Outputs	Programmable Gain	Control Interface	Input Clamp	Standards Supported	Supply Voltage	Coupling	Package
FMS6501	12	9	X	I <sup>2</sup> C	X	480i (NTSC/PAL), 480p, 720p, 1080i	3.3V to 5V	AC or DC in/out	SSOP-28

## Triple DACs

Part Number	Resolution (Bits)	Conversion Rate (MSPS)	Settling Time (ns)	DLE (±LSB)	ILE (±LSB)	Supply Voltage (V)	Power Consumption (mW)	Package
FMS3818	3x8	180	2.5/3%	0.3	0.3	3.3	300	LQFP-48

## Video Filter Drivers

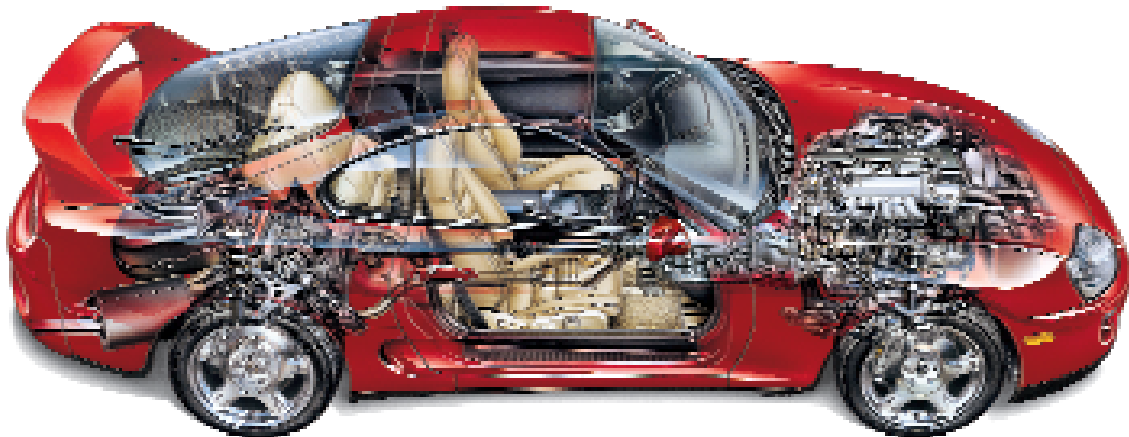
Part Number	Number of Drivers	Input Format	Output Format	Cutoff (MHz)	LP Filter Order	Input Clamps	Sync Strippers	Coupling	Package
FMS6413	1	CV	CV	7.1	4th	X	X	AC in/out	SOIC-8
FMS6143	3	CV, YC, YUV, RGB	CV, YC YUV, RGB	8	4th	X	X	AC or DC	SOIC-8
FMS6408	3	CV, YC, YUV, RGB	CV, YC YUV, RGB	7.1	5th	X	X	DC in/AC out	TSSOP-14

## Encoder

Part Number	Format		Number of DACs	MPEG Interface	Component (YUV or RGB)	Broadcast Formats (D1, CCIR-601)	Sinx/x Filters	Package	Comment
	Input	Output							
TMC2490A	CCIR601, CCIR656, YCrCb	Composite, NTSC, PAL, YC	3	Yes	No	Yes	Yes	PLCC-44	Used for Graphic Overlay or Display
TMC2193	CCIR601, CCIR656, Digital Composite, RGB	Betacom Composite, Digital Composite, YC, YPbPr	4	Yes	Yes	Yes	Yes	MQFP-100	

## Operational Amplifiers

Part Number	No. of Amps	CMIR w/rail	RRIO	BW (MHz)	SR (V/us)	Is/amp (mA)	Iout (mA)	en (nV/ $\sqrt{\text{Hz}}$ )	Vos (mV)	Supply Voltage Range (V)	Package
LMV321	1	Yes	Output	3.1	1.5	0.1	$\pm 30$	33	1	2.5 to 5.5	SOT23-5, SC70-5
LMV358	2	Yes	Output	3.1	1.5	0.1	$\pm 30$	33	1	2.5 to 5.5	SOIC-8, MSOP-8
LMV324	4	Yes	Output	3.1	1.5	0.1	$\pm 30$	33	1	2.5 to 5.5	SOIC-14, TSSOP-14
FAN4174	1	Yes	Both	3.7	3	0.2	$\pm 33$	25	0	2.5 to 5.5	SOT23-5, SC70-5



For additional information about Fairchild's Automotive Solutions, please visit [www.fairchildsemi.com/automotive/](http://www.fairchildsemi.com/automotive/)



for datasheets, application notes, samples and more, visit [www.fairchildsemi.com](http://www.fairchildsemi.com)

For a complete listing of sales representatives and sales offices, visit [www.fairchildsemi.com/cf/sales\\_contacts/](http://www.fairchildsemi.com/cf/sales_contacts/)

#### Americas

Fairchild Semiconductor  
Customer Response Center  
7701 Las Colinas Ridge,  
Suite 400 Irving, Texas 75063  
United States

#### China

Fairchild Semiconductor  
(Shanghai) Company Limited  
Beijing Liaison Office Room 2506,  
China Resources Building  
No. 8, Jianguomenbei Avenue  
Beijing 100005, P.R. China  
Tel: 86-10-8519-2060  
Fax: 86-10-8519-2061

Fairchild Semiconductor  
(Shanghai) Company Limited  
Shenzhen Liaison Office  
Room 1506, China Resources Building  
5001 Shen Nan Road East  
Shenzhen 518008, P.R. China  
Tel: 86-755-8246-3088  
Fax: 86-755-8246-2092

Fairchild Semiconductor  
(Shanghai) Company Limited  
Puxi Liaison Office  
Room 2208, Kerry Centre  
No. 1515 Nanjing West Road  
Jingan, Shanghai 200040  
P.R. China  
Tel: 86-21-5298-6262  
Fax: 86-21-5298-5118/9

Fairchild Semiconductor  
(Shanghai) Company Limited  
Chengdu Liaison Office  
Unit 603, Block A  
Fuhe Business Incubation Base  
Chengdu Hi-Tech Zone  
Innovation Service Center  
12 Gaopeng Road  
Chengdu 610041, Sichuan  
P.R. China  
Tel : 86-28-8515-1709  
Fax : 86-28-8515-2604

Fairchild Semiconductor  
(Shanghai) Company Limited  
Xiamen Liaison Office  
Unit D, 14/F, International Plaza  
8 Lujiang Road  
Xiamen 361001, Fujian  
P.R. China  
Tel : 86-592-2101-688  
Fax : 86-592-2101-678

Fairchild Semiconductor  
(Shanghai) Company Limited  
Qingdao Liaison Office  
Room 20D Hua Ren International Building  
2 Jia Shandong Road  
Qingdao 266071, Shandong  
P.R. China  
Tel : 86-532-3096-550  
Fax : 86-532-3096-551

#### Finland

Fairchild Semiconductor  
Itakatu 3 D 213  
FIN-00930 Helsinki  
Finland  
Tel: 358-9-3411266  
Fax: 358-9-3411292

#### France

Fairchild Semiconductor  
3 Avenue du Quebec  
Immeuble Ontario  
91140 Villebon sur Yvette  
France  
Tel: 33-1-5634-7210  
Fax: 33-1-5634-7211

#### Germany

Fairchild Semiconductor GmbH  
Oskar-von-Miller-Strasse 4e  
D-82256 Fürstfeldbruck  
Germany  
Tel: 49-8141-6102-0  
Fax: 49-8141-6102-100

#### Hong Kong

Fairchild Semiconductor  
Hong Kong Ltd.  
19/F, CMG Asia Tower  
The Gateway II  
15 Canton Road  
Tsimshatsui, Kowloon  
Hong Kong  
Tel: 8522722-8338  
Fax: 852-3579-2230

#### Italy

Fairchild Semiconductor Srl  
Via Carducci, 125  
20099 Sesto San Giovanni (MI)  
Italy  
Tel: 39-02249111-1  
Fax: 39-0226263424

#### Japan

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

Fairchild Semiconductor Japan Ltd.  
Osaka Office  
Shin-Osaka Meiko Building 8F  
4-3-12, Miyahara, Yodogawa-ku  
Osaka, 532-0003 Japan  
Tel: 81-6-6398-3670  
Fax: 81-6-6398-3680

#### Korea

Fairchild Korea Semiconductor, Ltd.  
Bucheon Office  
82-3, Dodang-Dong,  
Wonmi-Ku, Bucheon,  
Gyeonggi-do, 420-711 Korea  
Tel: 82-32-680-1114  
Fax: 82-32-680-1949

Fairchild Korea Semiconductor, Ltd.  
Suwon Office  
5th Floor Saemaeul-hoi Building  
1122-12, Ingye-Dong  
Paldal-Gu, Suwon-Si Gyeonggi-Do 442-070  
Korea  
Tel: 82-31-231-3100  
Fax: 82-31-231-9846

Fairchild Korea Semiconductor, Ltd.  
Gumi Office  
4F Saero-net Building  
274-9, Songjeong-dong  
Gumi-si, Gyeongsang-buk-Do,  
730-090, Korea  
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 Pte. Ltd.  
350 Orchard Road  
#20-01/03 Shaw House  
Singapore 238868  
Tel: 65-6836-0936  
Fax: 65-6838-0321/3

#### Sweden

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

#### Taiwan

Fairchild Semiconductor  
Hong Kong Ltd. Taiwan Branch  
18F-A, No. 167  
Tun Hwa North Road  
Taipei 10500, Taiwan  
Tel: 886-2-2712-0500  
Fax: 886-2-2546-7188

#### UK

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



The following are registered and unregistered trademarks Fairchild Semiconductor owns or is authorized to use and is not intended to be an exhaustive list of all such trademarks: ACE<sup>x</sup>, Across the board. Around the world.<sup>TM</sup>, ActiveArray<sup>TM</sup>, Bottomless<sup>TM</sup>, CoolFET<sup>TM</sup>, CROSS-VOLT<sup>TM</sup>, DOME<sup>TM</sup>, EcoSPARK<sup>TM</sup>, E2CMOS<sup>TM</sup>, EnSigna<sup>TM</sup>, FACT<sup>TM</sup>, FACT Quiet Series<sup>TM</sup>, FAST<sup>®</sup>, FAST<sup>TM</sup>, FFAST<sup>TM</sup>, FRFET<sup>TM</sup>, GlobalOptoisolator<sup>TM</sup>, GTO<sup>TM</sup>, HiSeC<sup>TM</sup>, I2C<sup>TM</sup>, iLo<sup>TM</sup>, ImpliedDisconnect<sup>TM</sup>, ISOPLANAR<sup>TM</sup>, LittleFET<sup>TM</sup>, MICROCOUPLER<sup>TM</sup>, MicroFET<sup>TM</sup>, MicroPak<sup>TM</sup>, MICROWIRE<sup>TM</sup>, MSX<sup>TM</sup>, MSXPro<sup>TM</sup>, OCX<sup>TM</sup>, OCXPro<sup>TM</sup>, OPTOLOGIC<sup>®</sup>, OPTOPLANAR<sup>TM</sup>, PACMAN<sup>TM</sup>, POP<sup>TM</sup>, Power247<sup>TM</sup>, PowerEdge<sup>TM</sup>, PowerSaver<sup>TM</sup>, PowerTrench<sup>®</sup>, Programmable Active Droop<sup>TM</sup>, QFET<sup>®</sup>, QS<sup>TM</sup>, QT Optoelectronics<sup>TM</sup>, Quiet Series<sup>TM</sup>, RapidConfigure<sup>TM</sup>, RapidConnect<sup>TM</sup>,  $\mu$ SerDes<sup>TM</sup>, SILENT SWITCHER<sup>®</sup>, SMART START<sup>TM</sup>, SPM<sup>TM</sup>, Stealth<sup>TM</sup>, SuperFET<sup>TM</sup>, SuperSOT<sup>TM</sup>-3, SuperSOT<sup>TM</sup>-6, SuperSOT<sup>TM</sup>-8, SyncFET<sup>TM</sup>, The Power Franchise<sup>®</sup>, TinyLogic<sup>TM</sup>, TINYOPTO<sup>TM</sup>, TruTranslation<sup>TM</sup>, UHC<sup>TM</sup>, UltraFET<sup>®</sup>, VCX<sup>TM</sup>.