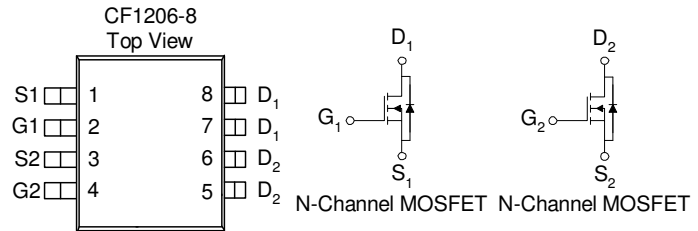


Dual N-Channel 30-V (D-S) MOSFET

These miniature surface mount MOSFETs utilize a high cell density trench process to provide low $r_{DS(on)}$ and to ensure minimal power loss and heat dissipation. Typical applications are DC-DC converters and power management in portable and battery-powered products such as computers, printers, PCMCIA cards, cellular and cordless telephones.

PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ m(Ω)	I_D (A)
30	35 @ $V_{GS} = 10V$	6.4
	45 @ $V_{GS} = 4.5V$	5.6

- Low $r_{DS(on)}$ provides higher efficiency and extends battery life
- Low thermal impedance copper leadframe DFN2x3 saves board space
- Fast switching speed
- High performance trench technology



ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ }^\circ\text{C}$ UNLESS OTHERWISE NOTED)			
Parameter	Symbol	Limit	Units
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current ^a	I_D	$T_A=25\text{ }^\circ\text{C}$	A
		$T_A=70\text{ }^\circ\text{C}$	
Pulsed Drain Current ^b	I_{DM}	± 30	
Continuous Source Current (Diode Conduction) ^a	I_S	1.7	A
Power Dissipation ^a	P_D	$T_A=25\text{ }^\circ\text{C}$	W
		$T_A=70\text{ }^\circ\text{C}$	
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150	$^\circ\text{C}$

THERMAL RESISTANCE RATINGS			
Parameter	Symbol	Maximum	Units
Maximum Junction-to-Ambient ^a	$R_{\theta JA}$	t \leq 10 sec	$^\circ\text{C}/\text{W}$
		Steady State	62.5
		80	$^\circ\text{C}/\text{W}$

Notes

- a. Surface Mounted on 1" x 1" FR4 Board.
- b. Pulse width limited by maximum junction temperature

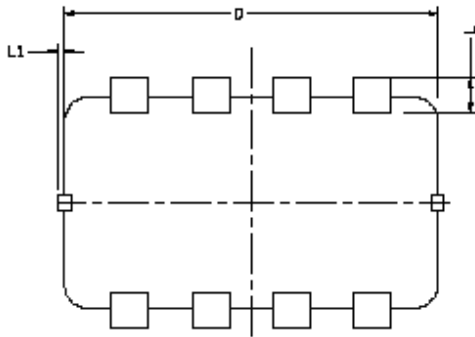
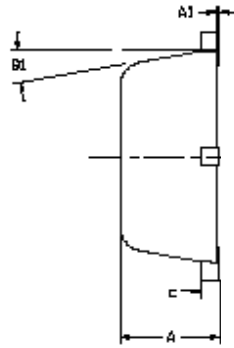
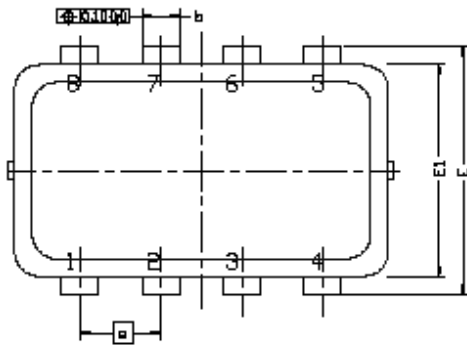
SPECIFICATIONS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Conditions	Limits			Unit
			Min	Typ	Max	
Static						
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250 \mu\text{A}$	1			V
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0 \text{ V}, V_{GS} = \pm 20 \text{ V}$			± 10	μA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 24 \text{ V}, V_{GS} = 0 \text{ V}$			1	μA
		$V_{DS} = 24 \text{ V}, V_{GS} = 0 \text{ V}, T_J = 55^\circ\text{C}$			30	
On-State Drain Current ^A	$I_{D(on)}$	$V_{DS} = 5 \text{ V}, V_{GS} = 4.5 \text{ V}$	20			A
Drain-Source On-Resistance ^A	$r_{DS(on)}$	$V_{GS} = 10 \text{ V}, I_D = 2 \text{ A}$			35	m Ω
		$V_{GS} = 4.5 \text{ V}, I_D = 2 \text{ A}$			45	
Forward Transconductance ^A	g_{fs}	$V_{DS} = 15 \text{ V}, I_D = 2 \text{ A}$		22		S
Diode Forward Voltage	V_{SD}	$I_S = 0.5 \text{ A}, V_{GS} = 0 \text{ V}$		0.7		V
Dynamic^b						
Total Gate Charge	Q_g	$V_{DS} = 10 \text{ V}, V_{GS} = 4.5 \text{ V},$ $I_D = 2 \text{ A}$		1		nC
Gate-Source Charge	Q_{gs}			0.4		
Gate-Drain Charge	Q_{gd}			0.7		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 10 \text{ V}, R_L = 15 \Omega, I_D = 1 \text{ A},$ $V_{GEN} = 4.5 \text{ V}$		2		nS
Rise Time	t_r			5		
Turn-Off Delay Time	$t_{d(off)}$			10		
Fall-Time	t_f			4		

Notes

- Pulse test: $PW \leq 300\mu\text{s}$ duty cycle $\leq 2\%$.
- Guaranteed by design, not subject to production testing.

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Package Information



DIM.	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.700	0.80	0.900	0.0276	0.0313	0.0354
A1	0.00	---	0.03	0.000	---	0.002
b	0.24	0.30	0.35	0.009	0.012	0.014
c	0.08	0.152	0.25	0.003	0.006	0.010
D	3.00 BSC			0.118 BSC		
E	2.00 BSC			0.079 BSC		
E1	1.70 BSC			0.067 BSC		
e	0.65 BSC			0.026 BSC		
L	0.20	0.275	0.400	0.008	0.011	0.0157
L1	0	---	0.100	0	---	0.004
Ø	0°	10°	12°	0°	10°	12°