



**P-Channel Enhancement MOSFET**

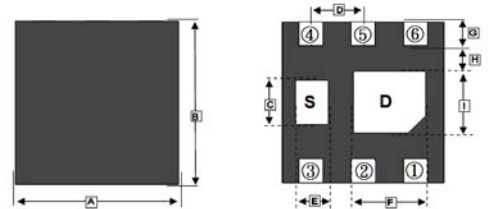
VDS= -12V, ID= -16A



**DESCRIPTION**

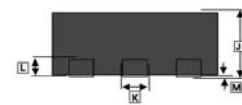
The YS1216CF provide the designer with the best combination of fast switching, ruggedized device design, low on-resistance and cost-effectiveness. The DFN2x2-6 package is universally preferred for all commercial-industrial surface mount applications and suited for low voltage applications such as DC/DC converters.

DFN2x2-6

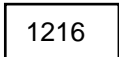


**FEATURES**

- Lower Gate Charge
- Simple Drive Requirement
- Fast Switching Characteristic



**MARKING**

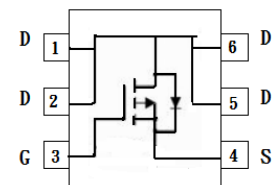


REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.924	2.076	H	0.20	-
B	1.924	2.076	I	0.80	1.05
C	0.46	0.66	J	0.50	0.90
D	0.65 TYP.		K	0.20	0.40
E	0.20	0.40	L	0.203REF	
F	0.80	1.00	M	0.00	0.05
G	0.174	0.350			

**PACKAGE INFORMATION**

Package	MPQ	Leader Size
DFN2x2-6	3K	7inch

Top View



**ABSOLUTE MAXIMUM RATINGS** (T<sub>A</sub>=25°C unless otherwise specified)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V <sub>DS</sub>	-12	V
Gate-Source Voltage	V <sub>GS</sub>	±8	V
Continuous Drain Current (t≤10s)	I <sub>D</sub>	-16	A
Pulsed Drain Current <sup>1</sup>	I <sub>DM</sub>	-65	A
Power Dissipation @ T <sub>A</sub> = 25°C <sup>2</sup>	P <sub>D</sub>	2.5	W
Maximum Power Dissipation @ T <sub>C</sub> = 25°C <sup>3</sup>		18	
Thermal Resistance Junction-Ambient <sup>4</sup>	R <sub>θJA</sub>	50	°C / W
Thermal Resistance from Junction to Case <sup>4</sup>	R <sub>θJC</sub>	6.9	°C / W
Operating Junction & Storage Temperature	T <sub>J</sub> , T <sub>STG</sub>	150, -55~150	°C

# YS1216CF

## ELECTRICAL CHARACTERISTICS (T<sub>J</sub> = 25°C unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
<b>Static</b>						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	-12	-	-	V	V <sub>GS</sub> =0, I <sub>D</sub> = -250μA
Gate-Source Leakage Current	I <sub>GSS</sub>	-	-	±100	nA	V <sub>GS</sub> = ±8V, V <sub>DS</sub> =0
Drain-Source Leakage Current	I <sub>DSS</sub>	-	-	-1	μA	V <sub>DS</sub> = -12V, V <sub>GS</sub> =0
Gate-Threshold Voltage <sup>5</sup>	V <sub>GS(th)</sub>	-0.4	-0.7	-1	V	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> = -250μA
Forward Transconductance <sup>5</sup>	g <sub>fs</sub>	-	40	-	S	V <sub>DS</sub> = -10V, I <sub>D</sub> = -6.7A
Static Drain-Source On-Resistance <sup>5</sup>	R <sub>DS(ON)</sub>	-	-	21	mΩ	V <sub>DS</sub> = -4.5V, I <sub>D</sub> =-6.7A
		-	-	27		V <sub>GS</sub> = -2.5V, I <sub>D</sub> = -6.2A
<b>Switching Parameters <sup>6</sup></b>						
Total Gate Charge	Q <sub>g</sub>	-	60	-	nC	I <sub>D</sub> = -10A V <sub>DS</sub> = -6V V <sub>GS</sub> = -8V
		-	35	-		I <sub>D</sub> = -10A V <sub>DS</sub> = -6V V <sub>GS</sub> = -4.5V
Gate-Source Charge	Q <sub>gs</sub>	-	5	-		
Gate-Drain Change	Q <sub>gd</sub>	-	10	-		
Input Capacitance	C <sub>iss</sub>	-	2700	-	pF	V <sub>GS</sub> =0 V <sub>DS</sub> = -10V f =1.0MHz
Output Capacitance	C <sub>oss</sub>	-	680	-		
Reverse Transfer Capacitance	C <sub>rss</sub>	-	590	-		
<b>Drain-Source Diode Characteristics</b>						
Diode Forward Current <sup>5</sup>	I <sub>S</sub>	-	-	-16	A	
Diode Forward Voltage <sup>4</sup>	V <sub>SD</sub>	-	-	-1.2	V	I <sub>S</sub> = -8A, V <sub>GS</sub> =0

Note:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. This test is performed with no heat sink at T<sub>a</sub>=25°C.
3. This test is performed with infinite heat sink at T<sub>c</sub>=25°C.
4. Surface mounted on FR4 board, t≤10S.
5. Pulse Test: Pulse With ≤300μs, Duty Cycle≤2%.
6. Guaranteed by design, not subject to production testing.

# YS1216CF

## CHARACTERISTIC CURVES

