

# Dual N-CHANNEL ENHANCEMENT MODE POWER MOSFET

## MTDN4228Q8

### Description

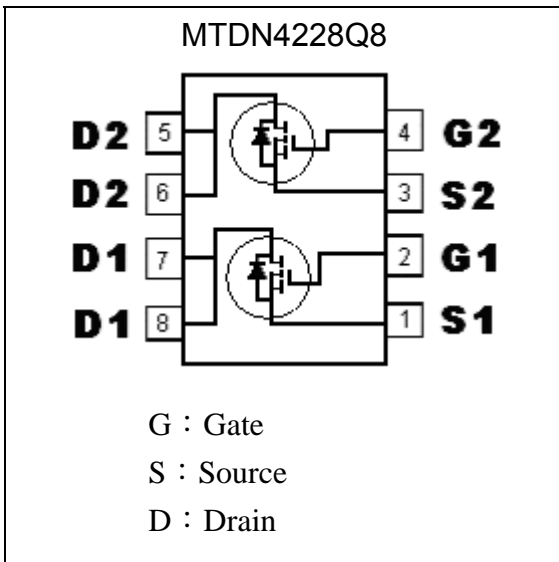
The MTDN4228Q8 provides the designer with the best combination of fast switching, ruggedized device design, low on-resistance and cost effectiveness.

The SOP-8 package is universally preferred for all commercial-industrial surface mount applications and suited for low voltage applications such as DC/DC converters.

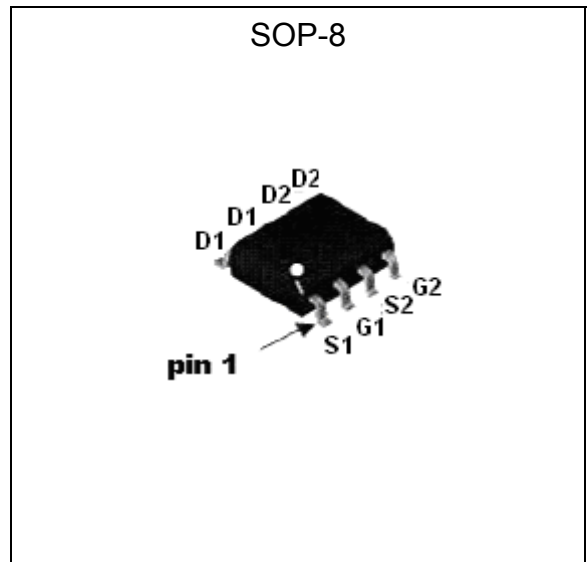
### Features

- $R_{DS(ON)}=40m\Omega @V_{GS}=4.5V, I_D=4A$
- Simple drive requirement
- Low on-resistance
- Fast switching speed
- Dual N-ch MOSFET package
- Pb-free package

### Equivalent Circuit



### Outline





**Absolute Maximum Ratings** (Ta=25°C)

Parameter	Symbol	Limits	Unit
Drain-Source Breakdown Voltage	BVDSS	30	V
Gate-Source Voltage	VGS	±20	V
Continuous Drain Current @TA=25 °C (Note 1)	ID	6.8	A
Continuous Drain Current @TA=70 °C (Note 1)	ID	5.5	A
Pulsed Drain Current (Note 2)	IDM	40	A
Total Power Dissipation @ TA=25 °C	Pd	2	W
Linear Derating Factor		0.016	W / °C
Operating Junction Temperature	Tj	-55~+150	°C
Storage Temperature	Tstg	-55~+150	°C
Thermal Resistance, Junction-to-Ambient	Rth,ja	62.5	°C/W

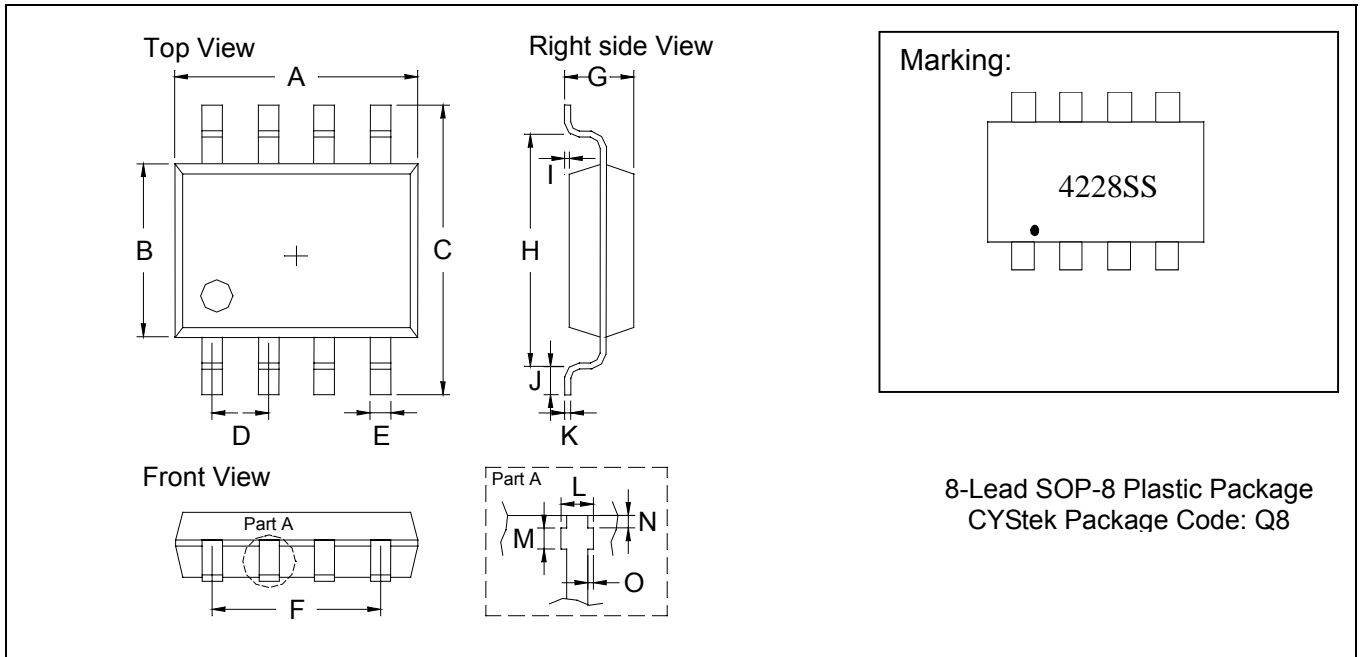
Note : 1.Surface mounted on 1 in<sup>2</sup> copper pad of FR-4 board, t≤10s.  
 2.Pulse width limited by maximum junction temperature.

**Electrical Characteristics** (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BVDSS	30	-	-	V	VGS=0, ID=250µA
VGS(th)	1	-	3	V	VDS=VGS, ID=-250µA
IGSS	-	-	±100	nA	VGS=±20V, VDS=0
IDSS	-	-	1	µA	VDS=30V, VGS=0
*RDS(ON)	-	-	26	mΩ	ID=6A, VGS=10V
	-	-	40		ID=4A, VGS=4.5V
*GFS	-	15	-	S	VDS=10V, ID=5A
Ciss	-	580	930	pF	VDS=25V, VGS=0, f=1MHz
Coss	-	150	-		
Crss	-	108	-		
td(ON)	-	10	-	ns	VDD=15V, ID=1A, VGS=10V, RGEN=3.3Ω, RD=15Ω
tr	-	9	-	ns	
td(OFF)	-	18	-	ns	
tr	-	6	-	ns	
Qg	-	9	15	nC	VDS=24V, ID=6.8A, VGS=4.5V,
Qgs	-	2	-	nC	
Qgd	-	6	-	nC	
*VSD	-	-	1.3	V	VGS=0V, ISD=1.7A

\*Pulse Test : Pulse Width ≤380µs, Duty Cycle≤2%

**SOP-8 Dimension**



\*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1909	0.2007	4.85	5.10	I	0.0019	0.0078	0.05	0.20
B	0.1515	0.1555	3.85	3.95	J	0.0118	0.0275	0.30	0.70
C	0.2283	0.2441	5.80	6.20	K	0.0074	0.0098	0.19	0.25
D	0.0480	0.0519	1.22	1.32	L	0.0145	0.0204	0.37	0.52
E	0.0145	0.0185	0.37	0.47	M	0.0118	0.0197	0.30	0.50
F	0.1472	0.1527	3.74	3.88	N	0.0031	0.0051	0.08	0.13
G	0.0570	0.0649	1.45	1.65	O	0.0000	0.0059	0.00	0.15
H	0.1889	0.2007	4.80	5.10					

Notes: 1.Controlling dimension: millimeters.  
 2.Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.  
 3.If there is any question with packing specification or packing method, please contact your local CYStek sales office.

**Material:**

- Lead: 42 Alloy; solder plating
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

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