Dual N-CHANNEL ENHANCEMENT MODE POWER MOSFET

MTDN4228Q8

Description

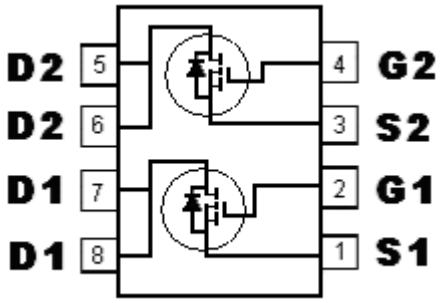
The MTDN4228Q8 provides the designer with the best combination of fast switching, ruggedized device design, low on-resistance and cost effectiveness.
The SOP-8 package is universally preferred for all commercial-industrial surface mount applications and suited for low voltage applications such as DC/DC converters.

Features

- $R_{DS(ON)}$=40mΩ@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

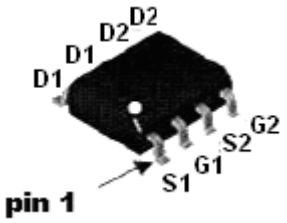
MTDN4228Q8



G：Gate
S：Source
D：Drain

Outline

SOP-8



Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current @T_A=25 °C (Note 1)	I_D	6.8	A
Continuous Drain Current @T_A=70 °C (Note 1)	I_D	5.5	A
Pulsed Drain Current (Note 2)	I_{DM}	40	A
Total Power Dissipation @ T_A=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

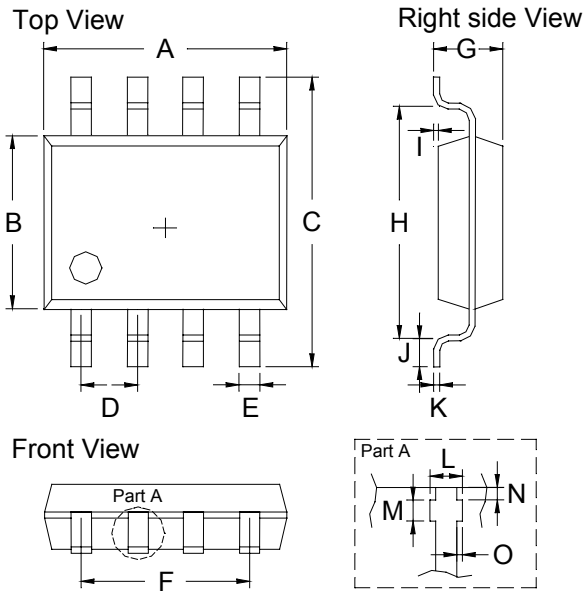
Note : 1.Surface mounted on 1 in² copper pad of FR-4 board, t≤10s.
2.Pulse width limited by maximum junction temperature.

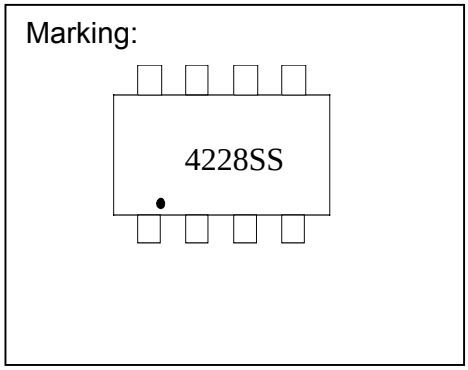
Electrical Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{DSS}	30	-	-	V	V_{GS}=0, I_D=250μA
$V_{GS(th)}$	1	-	3	V	V_{DS}=V_{GS}, I_D=-250μA
I_{GSS}	-	-	±100	nA	V_{GS}=±20V, V_{DS}=0
I_{DSS}	-	-	1	μA	V_{DS}=30V, V_{GS}=0
*$R_{DS(ON)}$	-	-	26	mΩ	I_D=6A, V_{GS}=10V
	-	-	40		I_D=4A, V_{GS}=4.5V
*G_{FS}	-	15	-	S	V_{DS}=10V, I_D=5A
Ciss	-	580	930	pF	V_{DS}=25V, V_{GS}=0, f=1MHz
Coss	-	150	-		
Crss	-	108	-		
$t_{d(ON)}$	-	10	-	ns	V_{DD}=15V, I_D=1A, V_{GS}=10V, R_{GEN}=3.3Ω, R_D=15Ω
t_r	-	9	-	ns	
$t_{d(OFF)}$	-	18	-	ns	
t_f	-	6	-	ns	
Qg	-	9	15	nC	V_{DS}=24V, I_D=6.8A, V_{GS}=4.5V,
Qgs	-	2	-	nC	
Qgd	-	6	-	nC	
*V_{SD}	-	-	1.3	V	V_{GS}=0V, I_{SD}=1.7A

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

SOP-8 Dimension





8-Lead SOP-8 Plastic Package
CYStek Package Code: Q8

*: 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