Nch+Pch MOSFET

■ Structure

Silicon N-channel MOS FET / Silicon P-channel MOS FET

■ Features

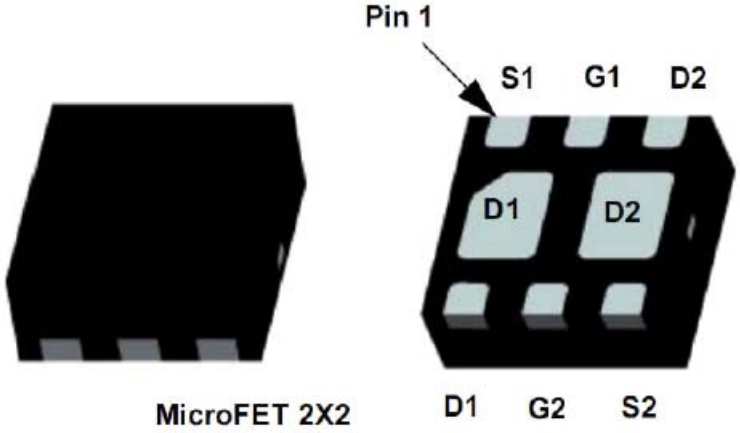
- Nch MOS FET and Pch MOS FET are put in DFN2×2-6 package.
- High-speed switching, low on-resistance.
- Low voltage drive
- Built-in G-S Protection Diode.

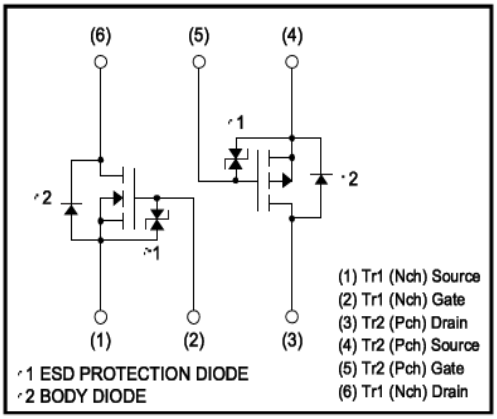
■ Applications

- Switching

■ Package

- **DFN2×2-6L-A**





■ Absolute Maximum Ratings

(TA=25℃ unless otherwise noted)

Parameter		Symbol	Limit		Unit
			Tr1:N channel	Tr1:P channel	
Drain-source voltage		VDS	20	-20	V
Gate-source voltage		VGS	±12	±12	V
Continuous Drain Current (Tj=150℃)	TA=25℃	ID	0.65	-0.8	A
	TA=80℃		0.45	-0.7	A
Pulsed drain current		IDM	1.0	-2.8	A
Continuous source current(Diode conduction)		Is	0.3	-0.58	A
Power dissipation	TA=25℃	PD	1.0		W/Total
			0.7		W/Element
Operating junction and storage Temperature range		Tj,TSTG	-55—150	-55—150	℃

■ Electrical Characteristics

- **N-ch**

(TA=25℃ unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
OFF Characteristics						
Drain-source breakdown voltage	BVDSS	VGS=0V, ID=250uA	20			V
Zero gate voltage drain current	IDSS	VDS=20V, VGS=0V			1	uA
Gate-body leakage	IGSS	VDS=0V, VGS=±12V			100	nA
ON Characteristics						
Gate threshold voltage	VGS(th)	VDS=VGS, ID=250uA	0.35		1.0	V
Drain-source on-state resistance	RDS(ON)	VGS=4.5V, ID=0.65A		0.26	0.38	mΩ
		VGS=2.5V, ID=0.55A		0.32	0.45	
Forward transconductance	gfs	VGS=10V, ID=0.4A		1.0		S
Switching Characteristics						
Turn-on delay time	tD(ON)	VDD=10V,VGEN=4.5V ID=0.5A, RGEN=60ohm		5	10	ns
Rise time	tr			8	15	
Turn-off delay time	tD(OFF)			10	18	
Fall time	tf			1.2	2.8	
Total gate charge	Qg	VDS=10V,ID=0.6A VGS=4.5V		1.2	1.5	nC
Gate-source charge	Qgs			0.2		
Gate-drain charge	Qgd			0.3		
Drain-Sour CE Diode Characteristics						
Diode forward voltage	VSD	VGS=0V,Is=0.15A		0.8	1.2	V

Notes:

a. surface mounted on FR4 board,t≤10sec

b. pulse test:pulse width≤300μs,duty≤2%

c. guaranteed by design, not subject to production testing

- **P-ch**

(TA=25℃ unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off Characteristics						
Drain-source breakdown voltage	BVDSS	VGS=0V, ID=-250uA	-20			V
Zero gate voltage drain current	IDSS	VDS=-20V, VGS=0V			-1	uA
Gate-body leakage	IGSS	VDS=0V, VGS=±12V			±100	nA
On Characteristics						
Gate threshold voltage	VGS(th)	VDS=VGS, ID=-250uA	-0.35		-0.8	V
Drain-source on-state resistance	RDS(ON)	VGS=-4.5V, ID=-0.45A		0.23	0.30	mΩ
		VGS=-2.5V, ID=-0.35A		0.37	0.45	
Forward transconductance	gfs	VGS=-10V, ID=-0.25A		0.4		S
Switching Characteristics						
Turn-on delay time	tD(ON)	VDD=-10V,VGEN=-4.5V ID=-0.4A, RGEN=60ohm		5.0	10	ns
Rise time	tr			15	25	
Turn-off delay time	tD(OFF)			8	15	
Fall time	tf			1.4	1.8	
Total gate charge	Qg	VDS=-10V,ID=-0.6A VGS=-4.5V		1.5	2.0	nC
Gate-source charge	Qgs			0.3		
Gate-drain charge	Qgd			0.35		
Drain-Source Diode Characteristics						
Diode forward voltage	VSD	VGS=0V,Is=-0.15A		-0.8	-1.2	V

Notes:

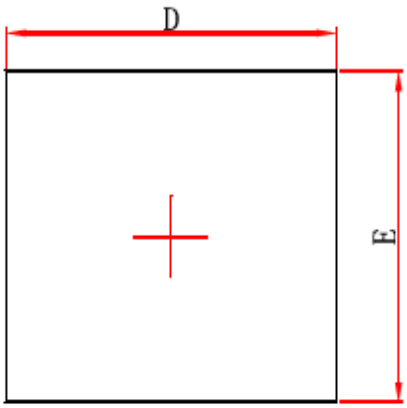
d. surface mounted on FR4 board,t ≤10sec

e. pulse test:pulse width≤300μs,duty≤2%

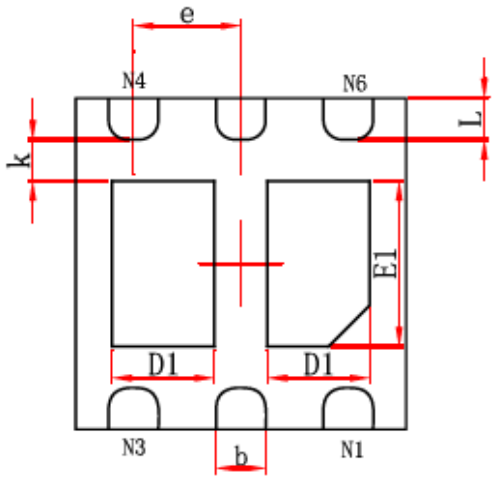
f. guaranteed by design, not subject to production testing

■ Package Information

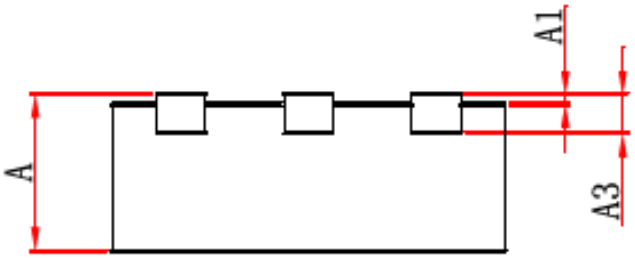
- **DFN2×2-6L-A**



Top View



Bottom View



Side View

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700/0.800	0.800/0.900	0.028/0.031	0.031/0.035
A1	0.000	0.050	0.000	0.002
A3	0.203REF.		0.008REF.	
D	1.924	2.076	0.076	0.082
E	1.924	2.076	0.076	0.082
D1	0.520	0.720	0.020	0.028
E1	0.900	1.100	0.035	0.043
k	0.200MIN.		0.008MIN.	
b	0.250	0.350	0.010	0.014
e	0.650TYP.		0.026TYP.	
L	0.174	0.326	0.007	0.013