CHENMKO ENTERPRISE CO.,LTD

CHM4600JPT

SURFACE MOUNT

Dual Enhancement Mode Field Effect Transistor

N-channel: VOLTAGE 30 Volts CURRENT 7.3 Ampere
P-channel: VOLTAGE 30 Volts CURRENT 4.6 Ampere

Lead free devices

APPLICATION

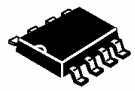
* Servo motor control.
* Power MOSFET gate drivers.
* Other switching applications.

FEATURE

* Small flat package. (SO-8)
* Super high dense cell design for extremely low $R_{DS(ON)}$.
* Lead free product is acquired.
* High power and current handing capability.

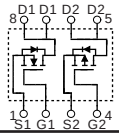
CONSTRUCTION

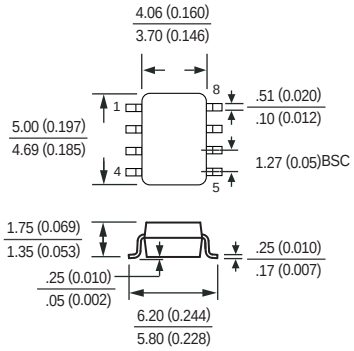
* N-Channel & P-Channel Enhancement in the package



SO-8

CIRCUIT





Dimensions in millimeters

SO-8

Absolute Maximum Ratings

T_A = 25°C unless otherwise noted

Symbol	Parameter	N-Channel	P-Channel	Units
V_{DSS}	Drain-Source Voltage	30	-30	V
V_{GSS}	Gate-Source Voltage	±20	±20	V
I_D	Maximum Drain Current - Continuous	7.3	-4.6	A
	- Pulsed (Note 3)	30	-20	
P_D	Maximum Power Dissipation	2000		mW
T_J	Operating Temperature Range	-55 to 150		°C
T_{STG}	Storage Temperature Range	-55 to 150		°C

Note : 1. Surface Mounted on FR4 Board , t <=10sec
2. Pulse Test , Pulse width <= 300us , Duty Cycle <= 2%
3. Repetitive Rating , Pulse width linited by maximum junction temperature
4. Guaranteed by design , not subject to production trsting

Thermal characteristics

$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient (Note 1)	62.5	°C/W

RATING CHARACTERISTIC CURVES (CHM4600JPT)

N-Channel Electrical Characteristics T_A = 25°C unless otherwise noted

Symbol	Parameter	Conditions	Min	Typ	Max	Units
OFF CHARACTERISTICS						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS} = 0 V, I_D = 250 µA	30			V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = 30 V, V_{GS} = 0 V			1	µA
I_{GSSF}	Gate-Body Leakage	V_{GS} = 20V,V_{DS} = 0 V			+100	nA
I_{GSSR}	Gate-Body Leakage	V_{GS} = -20V, V_{DS} = 0 V			-100	nA
ON CHARACTERISTICS (Note 2)						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}, I_D = 250 µA	1		3	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=10V, I_D=7.3A		18	22	mΩ
		V_{GS}=4.5V, I_D=6.3A		26	32	
g_{FS}	Forward Transconductance	V_{DS} =15V, I_D = 7.3A		10		S
SWITCHING CHARACTERISTICS (Note 4)						
Q_g	Total Gate Charge	V_{DS}=15V, I_D=7.3A V_{GS}=10V		21	28	nC
Q_{gs}	Gate-Source Charge			2.6		
Q_{gd}	Gate-Drain Charge			4.4		
t_{on}	Turn-On Time	V_{DD}= 15V I_D= 1.0A，V_{GS}= 10 V R_{GEN}= 6 Ω		22	45	nS
t_r	Rise Time			34	70	
t_{off}	Turn-Off Time			43	90	
t_f	Fall Time			18	35	
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
I_S	Drain-Source Diode Forward Current	(Note 1)			2.3	A
V_{SD}	Drain-Source Diode Forward Voltage	I_S = 2.3A，V_{GS} = 0 V (Note 2)			1.3	V

RATING CHARACTERISTIC CURVES (CHM4600JPT)

P-Channel Electrical Characteristics T_A = 25°C unless otherwise noted

Symbol	Parameter	Conditions	Min	Typ	Max	Units
OFF CHARACTERISTICS						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS} = 0 V, I_D = -250 µA	-30			V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = -30 V, V_{GS} = 0 V			-1	µA
I_{GSSF}	Gate-Body Leakage	V_{GS} = 20V, V_{DS} = 0 V			+100	nA
I_{GSSR}	Gate-Body Leakage	V_{GS} = -20V, V_{DS} = 0 V			-100	nA
ON CHARACTERISTICS (Note 2)						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}, I_D = -250 µA	-1		-3	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=-10V, I_D=-4.6A		46	55	mΩ
		V_{GS}=-4.5V, I_D=-4A		72	90	
g_{FS}	Forward Transconductance	V_{DS} = -15V, I_D = -4.6A		6.5		S
SWITCHING CHARACTERISTICS (Note 4)						
Q_g	Total Gate Charge	V_{DS}=-15V, I_D=-4.6A, V_{GS}=-10V		23	29	nC
Q_{gs}	Gate-Source Charge			2		
Q_{gd}	Gate-Drain Charge			6		
t_{on}	Turn-On Time	V_{DD}= -15V, I_D= -1.0A, V_{GS}= -10 V, R_{GEN}= 6Ω		19	48	nS
t_r	Rise Time			10	30	
t_{off}	Turn-Off Time			74	135	
t_f	Fall Time			36	75	
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
I_S	Drain-Source Diode Forward Current	(Note 1)			-2.3	A
V_{SD}	Drain-Source Diode Forward Voltage	I_S = -2.3A, V_{GS} = 0 V (Note 2)			-1.3	V