CHENMKO ENTERPRISE CO.,LTD

Halogens free devices

SURFACE MOUNT
N-Channel Enhancement Mode Field Effect Transistor
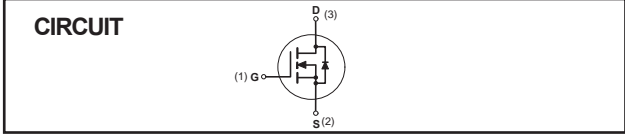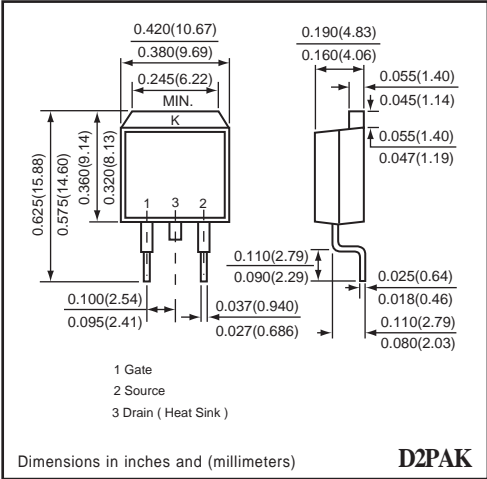*VOLTAGE 30 Volts   CURRENT 75 Ampere*

CHM76139NGP

APPLICATION

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

FEATURE

* Small flat package. (D2PAK)
* High density cell design for extremely low $R_{DS(ON)}$.
* Rugged and reliable.

CONSTRUCTION

* N-Channel Enhancement

CIRCUIT

D (3)

(1) G

S (2)

D2PAK

0.420(10.67)
0.380(9.69)
0.245(6.22)
MIN.
K
0.625(15.88)
0.575(14.60)
0.360(9.14)
0.320(8.13)
1 3 2
0.100(2.54)
0.095(2.41)
0.037(0.940)
0.027(0.686)
0.110(2.79)
0.090(2.29)

0.190(4.83)
0.160(4.06)
0.055(1.40)
0.045(1.14)
0.055(1.40)
0.047(1.19)
0.025(0.64)
0.018(0.46)
0.110(2.79)
0.080(2.03)

1 Gate
2 Source
3 Drain (Heat Sink)

Dimensions in inches and (millimeters)   **D2PAK**

Absolute Maximum Ratings T_A = 25°C unless otherwise noted

Symbol	Parameter	CHM76139NGP	Units
V_{DSS}	Drain-Source Voltage	30	V
V_{GSS}	Gate-Source Voltage	± 20	V
I_D	Maximum Drain Current - Continuous	75	A
	- Pulsed (Note 3)	225	
P_D	Maximum Power Dissipation	75	W
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

2006-01

ELECTRICAL CHARACTERISTIC (CHM76139NGP)

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=40A		5.0	7.0	mΩ
g_{FS}	Forward Transconductance	V_{DS} =10V, I_D = 40A		45		S
SWITCHING CHARACTERISTICS (Note 4)						
Q_g	Total Gate Charge	V_{DS}=15V, I_D=40A V_{GS}=5V		48	55	nC
Q_{gs}	Gate-Source Charge			10		
Q_{gd}	Gate-Drain Charge			24		
t_{on}	Turn-On Time	V_{DD}= 15V I_D = 60A, V_{GS}= 10 V R_{GEN}= 6Ω		20	38	nS
t_r	Rise Time			12	23	
t_{off}	Turn-Off Time			113	198	
t_f	Fall Time			40	78	
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
I_S	Drain-Source Diode Forward Current	(Note 1)			75	A
V_{SD}	Drain-Source Diode Forward Voltage	I_S = 40A, V_{GS}= 0 V (Note 2)			1.3	V