



CHENMKO ENTERPRISE CO.,LTD

Halogens free devices

SURFACE MOUNT
N-Channel Enhancement Mode Field Effect Transistor
VOLTAGE 200 Volts CURRENT 18 Ampere

CHM640NGP

APPLICATION

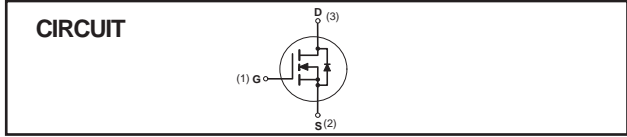
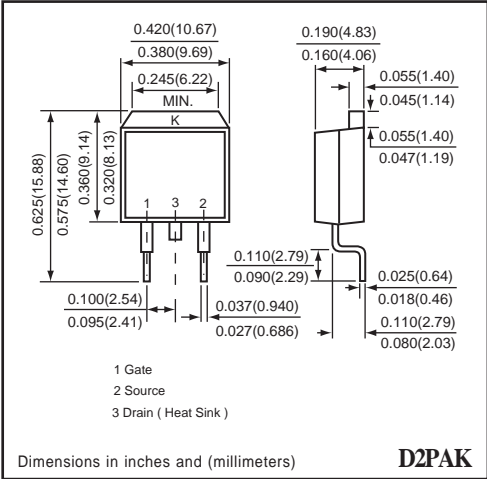
- * Servo motor control.
- * Power MOSFET gate drivers.
- * Other switching applications.

FEATURE

- * Small package. (D2PAK)
- * Super high dense cell design for extremely low $R_{DS(ON)}$.
- * High power and current handling capability.

CONSTRUCTION

- * N-Channel Enhancement



Absolute Maximum Ratings $T_A = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	CHM640NGP	Units
V_{DSS}	Drain-Source Voltage	200	V
V_{GSS}	Gate-Source Voltage	± 20	V
I_D	Maximum Drain Current - Continuous	18	A
	- Pulsed (Note 3)	76	
P_D	Maximum Power Dissipation at $T_c = 25^\circ\text{C}$	120	W
T_J	Operating Temperature Range	-55 to 150	$^\circ\text{C}$
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ\text{C}$

Note : 1. Surface Mounted on FR4 Board , $t \leq 10\text{sec}$
 2. Pulse Test , Pulse width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$
 3. Repetitive Rating , Pulse width limited 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	$^\circ\text{C/W}$
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ELECTRICAL CHARACTERISTIC (CHM640NGP)

Electrical Characteristics $T_A = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Conditions	Min	Typ	Max	Units
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OFF CHARACTERISTICS

BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS} = 0\text{ V}, I_D = 250\ \mu\text{A}$	200			V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 160\text{ V}, V_{GS} = 0\text{ V}$			25	μA
I_{GSSF}	Gate-Body Leakage	$V_{GS} = 20\text{ V}, V_{DS} = 0\text{ V}$			+100	nA
I_{GSSR}	Gate-Body Leakage	$V_{GS} = -20\text{ V}, V_{DS} = 0\text{ V}$			-100	nA

ON CHARACTERISTICS (Note 2)

$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\ \mu\text{A}$	2		4	V
$R_{DS(on)}$	Static Drain-Source On-Resistance	$V_{GS}=10\text{V}, I_D=10\text{A}$		125	150	$\text{m}\Omega$
g_{FS}	Forward Transconductance	$V_{DS}=10\text{V}, I_D=9\text{A}$		9		S

Dynamic Characteristics

C_{iss}	Input Capacitance	$V_{DS} = 25\text{V}, V_{GS} = 0\text{V},$ $f = 1.0\text{ MHz}$		1955		pF
C_{oss}	Output Capacitance			355		
C_{rss}	Reverse Transfer Capacitance			55		

SWITCHING CHARACTERISTICS (Note 4)

Q_g	Total Gate Charge	$V_{DS}=160\text{V}, I_D=18\text{A}$ $V_{GS}=10\text{V}$		44	57	nC
Q_{gs}	Gate-Source Charge			8		
Q_{gd}	Gate-Drain Charge			14		
t_{on}	Turn-On Time	$V_{DD}= 100\text{V}$ $I_D = 11\text{A}, V_{GS} = 10\text{ V}$ $R_{GEN} = 9.1\ \Omega$		21	42	nS
t_r	Rise Time			5	10	
t_{off}	Turn-Off Time			66	132	
t_f	Fall Time			11	22	

DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS

I_S	Drain-Source Diode Forward Current	(Note 1)			19	A
V_{SD}	Drain-Source Diode Forward Voltage	$I_S = 18\text{A}, V_{GS} = 0\text{ V}$ (Note 2)			1.5	V