

Halogens free devices



CHENMKO ENTERPRISE CO.,LTD

**SURFACE MOUNT
P-Channel Enhancement Mode Field Effect Transistor
VOLTAGE 30 Volts CURRENT 18 Ampere**

CHM05P03NGP

APPLICATION

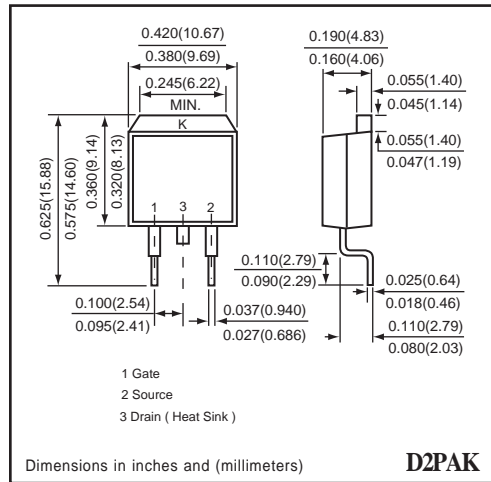
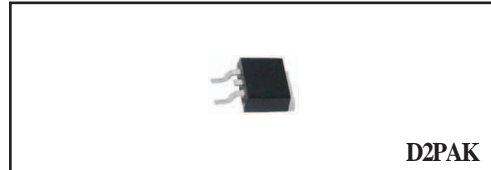
- * Servo motor control.
- * Power MOSFET gate drivers.
- * Other switching applications.

FEATURE

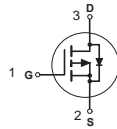
- * Small flat package. (D2PAK)
- * High density cell design for extremely low Rds(ON).
- * Rugged and reliable.

CONSTRUCTION

- * P-Channel Enhancement



CIRCUIT



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

Symbol	Parameter	CHM05P03NGP	Units
V_{DSS}	Drain-Source Voltage	-30	V
V_{GSS}	Gate-Source Voltage	± 20	V
I_D	Maximum Drain Current - Continuous	-18	A
	- Pulsed (Note 3)	-50	
P_D	Maximum Power Dissipation	47	W
T_J	Operating Temperature Range	-55 to 175	$^\circ\text{C}$
T_{STG}	Storage Temperature Range	-55 to 175	$^\circ\text{C}$

- 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	$^\circ\text{C/W}$
-----------------	--	------	--------------------

ELECTRICAL CHARACTERISTIC (CHM05P03NGP)

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

Symbol	Parameter	Conditions	Min	Typ	Max	Units
--------	-----------	------------	-----	-----	-----	-------

OFF CHARACTERISTICS

BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS} = 0\text{ V}, I_D = -250\ \mu\text{A}$	-30			V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = -30\text{ V}, V_{GS} = 0\text{ V}$			-1	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	$V_{DS} = V_{GS}, I_D = -250\ \mu\text{A}$	-1		-3	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS} = -10\text{ V}, I_D = -4.9\text{ A}$		42	70	$\text{m}\Omega$
		$V_{GS} = -4.5\text{ V}, I_D = -2\text{ A}$		78	120	
g_{FS}	Forward Transconductance	$V_{DS} = -15\text{ V}, I_D = -4.9\text{ A}$	5			S

SWITCHING CHARACTERISTICS (Note 4)

Q_g	Total Gate Charge	$V_{DS} = -15\text{ V}, I_D = -4.9\text{ A}$ $V_{GS} = -10\text{ V}$		8	15	nC
Q_{gs}	Gate-Source Charge			11	20	
Q_{gd}	Gate-Drain Charge			23	40	
t_{on}	Turn-On Time	$V_{DD} = -15\text{ V}$ $I_D = -1.0\text{ A}, V_{GS} = -10\text{ V}$ $R_{GEN} = 6\ \Omega$		8	15	nS
t_r	Rise Time			11	20	
t_{off}	Turn-Off Time			23	40	
t_f	Fall Time			14	25	

DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS

I_S	Drain-Source Diode Forward Current	(Note 1)			-18	A
V_{SD}	Drain-Source Diode Forward Voltage	$I_S = -1.7\text{ A}, V_{GS} = 0\text{ V}$ (Note 2)		-0.79	-1.2	V