



CHENMKO ENTERPRISE CO.,LTD

SURFACE MOUNT

N-Channel Enhancement Mode Field Effect Transistor

VOLTAGE 200 Volts CURRENT 7.8 Ampere

CHM630PAPT

Lead free devices

APPLICATION

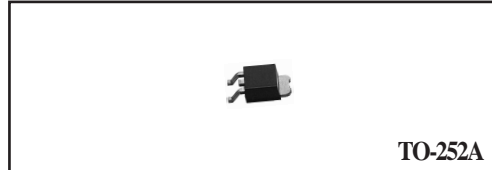
- * Servo motor control.
- * Power MOSFET gate drivers.
- * Other switching applications.

FEATURE

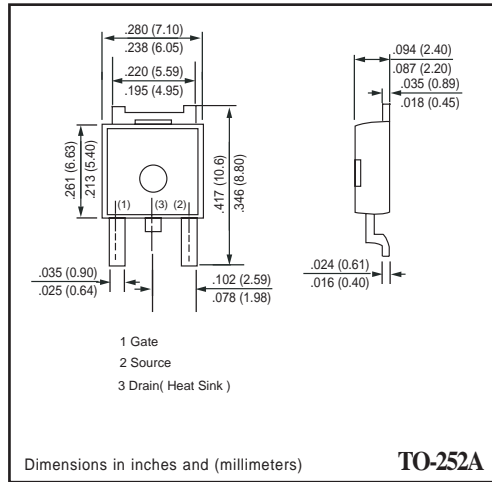
- * Small package. (TO-252A)
- * Super high dense cell design for extremely low $R_{DS(ON)}$.
- * High power and current handling capability.

CONSTRUCTION

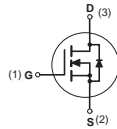
- * N-Channel Enhancement



TO-252A



CIRCUIT



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

Symbol	Parameter	CHM630PAPT	Units
V_{DSS}	Drain-Source Voltage	200	V
V_{GSS}	Gate-Source Voltage	± 20	V
I_D	Maximum Drain Current - Continuous	7.8	A
	- Pulsed (Note 3)	31.2	
P_D	Maximum Power Dissipation at $T_c = 25^\circ\text{C}$	50	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)	50	$^\circ\text{C/W}$
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RATING CHARACTERISTIC CURVES (CHM630PAPT)

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 V, I _D = 250 μ A	200			V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = 160 V, V _{GS} = 0 V			25	μ A
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 μ A	2	3	4	V
R _{DS(on)}	Static Drain-Source On-Resistance	V _{GS} =10V, I _D =5A			360	m Ω
g _{FS}	Forward Transconductance	V _{DS} =10V, I _D = 5A	3	6		S

SWITCHING CHARACTERISTICS (Note 4)

Q _g	Total Gate Charge	V _{DS} =160V, I _D =5.9A V _{GS} =10V		27	32	nC
Q _{gs}	Gate-Source Charge			4		
Q _{gd}	Gate-Drain Charge			14.7		
t _{on}	Turn-On Time	V _{DD} = 100V I _D =5A, V _{GS} = 10 V R _{GEN} = 50 Ω		50	60	nS
t _r	Rise Time			80	120	
t _{off}	Turn-Off Time			55	80	
t _f	Fall Time			40	50	

DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS

I _S	Drain-Source Diode Forward Current				7.8	A
V _{SD}	Drain-Source Diode Forward Voltage	I _S = 7.8A, V _{GS} = 0 V			1.3	V