



**CHENMKO ENTERPRISE CO.,LTD**

*Halogens free devices*

**SURFACE MOUNT**  
**N-Channel Enhancement Mode Field Effect Transistor**  
**VOLTAGE 100 Volts CURRENT 25 Ampere**

**CHM540APAGP**

**APPLICATION**

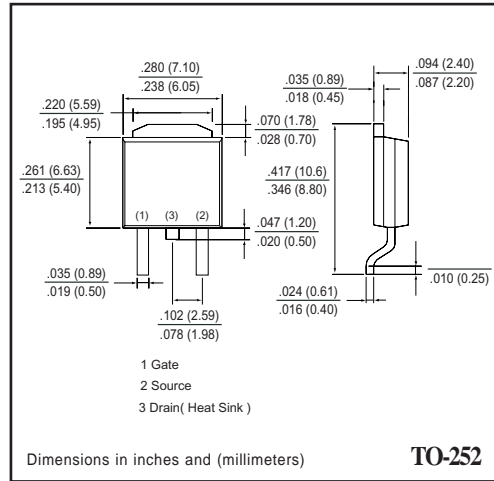
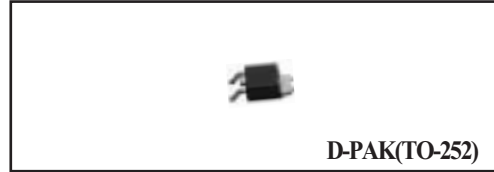
- \* Servo motor control.
- \* Power MOSFET gate drivers.
- \* Other switching applications.

**FEATURE**

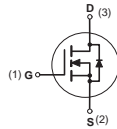
- \* Small package. (TO-252)
- \* Super high dense cell design for extremely low  $R_{DS(ON)}$ .
- \* High power and current handling capability.

**CONSTRUCTION**

- \* N-Channel Enhancement



**CIRCUIT**



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

Symbol	Parameter	CHM540APAGP	Units
$V_{DSS}$	Drain-Source Voltage	100	V
$V_{GSS}$	Gate-Source Voltage	$\pm 20$	V
$I_D$	Maximum Drain Current - Continuous	25	A
	- Pulsed (Note 3)	100	
$P_D$	Maximum Power Dissipation at $T_c = 25^\circ\text{C}$	68	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 ( CHM540APAGP )

**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 <sub>DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> = 0 V, I <sub>D</sub> = 250 $\mu$ A	100			V
I <sub>DSS</sub>	Zero Gate Voltage Drain Current	V <sub>DS</sub> = 100 V, V <sub>GS</sub> = 0 V			25	$\mu$ A
I <sub>GSSF</sub>	Gate-Body Leakage	V <sub>GS</sub> = 20V, V <sub>DS</sub> = 0 V			+100	nA
I <sub>GSSR</sub>	Gate-Body Leakage	V <sub>GS</sub> = -20V, V <sub>DS</sub> = 0 V			-100	nA

### ON CHARACTERISTICS (Note 2)

V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250 $\mu$ A	2		4	V
R <sub>DS(ON)</sub>	Static Drain-Source On-Resistance	V <sub>GS</sub> =10V, I <sub>D</sub> =18A			46	m $\Omega$
g <sub>FS</sub>	Forward Transconductance	V <sub>DS</sub> =25V, I <sub>D</sub> = 18A		14		S

### SWITCHING CHARACTERISTICS (Note 4)

Q <sub>g</sub>	Total Gate Charge	V <sub>DS</sub> =80V, I <sub>D</sub> =18A V <sub>GS</sub> =10V		37.5	48	nC
Q <sub>gs</sub>	Gate-Source Charge			6		
Q <sub>gd</sub>	Gate-Drain Charge			18		
t <sub>on</sub>	Turn-On Time	V <sub>DD</sub> = 50V I <sub>D</sub> =18A, V <sub>GS</sub> = 10 V R <sub>GEN</sub> = 5.1 $\Omega$		13	40	nS
t <sub>r</sub>	Rise Time			11	35	
t <sub>off</sub>	Turn-Off Time			32	65	
t <sub>f</sub>	Fall Time			15	45	

### DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS

I <sub>S</sub>	Drain-Source Diode Forward Current				25	A
V <sub>SD</sub>	Drain-Source Diode Forward Voltage	I <sub>S</sub> = 18A, V <sub>GS</sub> = 0 V			1.3	V