

Halogens free devices



**CHENMKO ENTERPRISE CO.,LTD**

**SURFACE MOUNT  
P-Channel Enhancement Mode Field Effect Transistor**

VOLTAGE 30 Volts CURRENT 5 Ampere

**CHM9535JGP**

**APPLICATION**

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

**FEATURE**

- \* Small flat package. (SO-8 )
- \* Super high dense cell design for extremely low  $R_{DS(ON)}$ .
- \* High power and current handling capability.
- \* Lead free product is acquired.

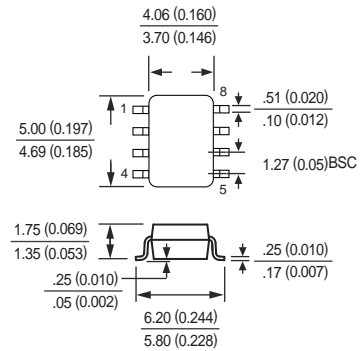
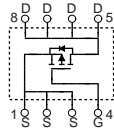
**CONSTRUCTION**

- \* P-Channel Enhancement



SO-8

**CIRCUIT**



Dimensions in millimeters

SO-8

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

Symbol	Parameter	CHM9535JGP	Units
$V_{DSS}$	Drain-Source Voltage	-30	V
$V_{GSS}$	Gate-Source Voltage	$\pm 20$	V
$I_D$	Maximum Drain Current - Continuous	-5.0	A
	- Pulsed (Note 3)	-20	
$P_D$	Maximum Power Dissipation	2500	mW
$T_J$	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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2006-02

## ELECTRICAL CHARACTERISTIC ( CHM9535JGP )

**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	-30			V
I <sub>DSS</sub>	Zero Gate Voltage Drain Current	V <sub>DS</sub> = -30 V, V <sub>GS</sub> = 0 V			-1	$\mu$ 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	-1		-3	V
R <sub>DS(on)</sub>	Static Drain-Source On-Resistance	V <sub>GS</sub> = -10V, I <sub>D</sub> = -5A		50	60	m $\Omega$
		V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -4A		70	95	
g <sub>FS</sub>	Forward Transconductance	V <sub>DS</sub> = -15V, I <sub>D</sub> = -5A		3		S

### Dynamic Characteristics

C <sub>iss</sub>	Input Capacitance	V <sub>DS</sub> = -15V, V <sub>GS</sub> = 0V, f = 1.0 MHz		552		pF
C <sub>oss</sub>	Output Capacitance			91		
C <sub>rss</sub>	Reverse Transfer Capacitance			61		

### SWITCHING CHARACTERISTICS (Note 4)

Q <sub>g</sub>	Total Gate Charge	V <sub>DS</sub> = -15V, I <sub>D</sub> = -5A V <sub>GS</sub> = -10V		9.5	12.5	nC
Q <sub>gs</sub>	Gate-Source Charge			3.4		
Q <sub>gd</sub>	Gate-Drain Charge			1.7		
t <sub>on</sub>	Turn-On Time	V <sub>DD</sub> = -15V I <sub>D</sub> = -1A, V <sub>GS</sub> = -10 V R <sub>GEN</sub> = 6 $\Omega$		11	22	nS
t <sub>r</sub>	Rise Time			3	8	
t <sub>off</sub>	Turn-Off Time			23	45	
t <sub>f</sub>	Fall Time			4	10	

### DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS

I <sub>S</sub>	Drain-Source Diode Forward Current	(Note 1)			-5.0	A
V <sub>SD</sub>	Drain-Source Diode Forward Voltage	I <sub>S</sub> = -5.0A, V <sub>GS</sub> = 0 V (Note 2)			-1.3	V