



CHENMKO ENTERPRISE CO.,LTD

Halogens free devices

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

VOLTAGE 30 Volts CURRENT 5.8 Ampere

CHM4431JGP

APPLICATION

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

FEATURE

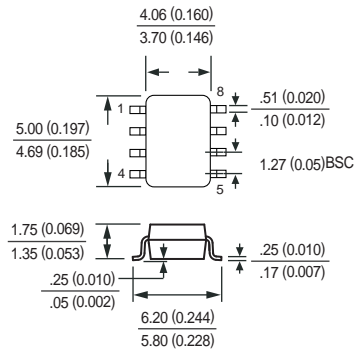
- * Small flat package. (SO-8)
- * Super high dense cell design for extremely low $R_{DS(ON)}$.
- * High power and current handling capability.
- * Lead free product is acquired.

CONSTRUCTION

- * P-Channel Enhancement



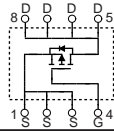
SO-8



Dimensions in millimeters

SO-8

CIRCUIT



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

Symbol	Parameter	CHM4431JPT	Units
V_{DSS}	Drain-Source Voltage	-30	V
V_{GSS}	Gate-Source Voltage	± 20	V
I_D	Maximum Drain Current - Continuous	-5.8	A
	- Pulsed (Note 3)	-30	
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

RATING CHARACTERISTIC CURVES (CHM4431JGP)

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 μA	-30			V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = -30 V, V _{GS} = 0 V			-1	μA
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 μA	-1		-3	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =-10V, I _D =-5.3A		35	40	mΩ
		V _{GS} =-4.5V, I _D =-2.0A		60	70	
g _{FS}	Forward Transconductance	V _{DS} = -15V, I _D = -5.3A	4.6	8		S

SWITCHING CHARACTERISTICS (Note 4)

Q _g	Total Gate Charge	V _{DS} =-15V, I _D =-5.3A V _{GS} =-10V		27	32	nC
Q _{gs}	Gate-Source Charge			3		
Q _{gd}	Gate-Drain Charge			8		
t _{on}	Turn-On Time	V _{DD} = -15V I _D = -1.0A, V _{GS} = -10 V R _{GEN} = 6 Ω		21	29	nS
t _r	Rise Time			13	20	
t _{off}	Turn-Off Time			62	86	
t _f	Fall Time			22	30	

DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS

I _S	Drain-Source Diode Forward Current	(Note 1)			-2.3	A
V _{SD}	Drain-Source Diode Forward Voltage	I _S = -2.3A, V _{GS} = 0 V (Note 2)			-1.2	V