CHENMKO ENTERPRISE CO.,LTD

Halogens free devices

CHM6168PAGP

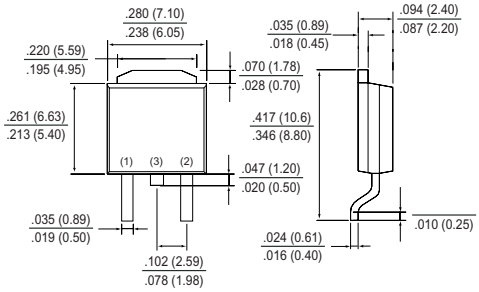
SURFACE MOUNT
N-Channel Enhancement Mode Field Effect Transistor
VOLTAGE 60 Volts CURRENT 2 8 Ampere

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 handing capability.

CONSTRUCTION
* N-Channel Enhancement

D-PAK(TO-252)

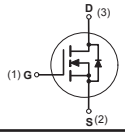


1 Gate
2 Source
3 Drain(Heat Sink)

Dimensions in inches and (millimeters)

TO-252

CIRCUIT



Absolute Maximum Ratings
T_A = 25°C unless otherwise noted

Symbol	Parameter	CHM6168PAGP	Units
V_{DSS}	Drain-Source Voltage	60	V
V_{GSS}	Gate-Source Voltage	±20	V
I_D	Maximum Drain Current - Continuous	28	A
	- Pulsed (Note 3)	112	
P_D	Maximum Power Dissipation at Tc = 25 °C	38	W
T_J	Operating Temperature Range	-55 to 175	°C
T_{STG}	Storage Temperature Range	-55 to 175	°C

Note : 1. Surface Mounted on FR4 Board , t <=10sec
2. Pulse Test , Pulse width <= 300us , Duty Cycle <= 2%
3. Repetitive Rating , Pulse width linited 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	°C/W

ELECTRICAL CHARACTERISTIC (CHM6168PAGP)

Electrical Characteristics T_A = 25°C unless otherwise noted

Symbol	Parameter	Conditions	Min	Typ	Max	Units
OFF CHARACTERISTICS						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS} = 0 V, I_D = 250 μA	60			V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = 60 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=19A		18	23	mΩ
		V_{GS}=4.5V, I_D=10A		27	38	
g_{FS}	Forward Transconductance	V_{DS} =10V, I_D = 28A		23		S
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS} = 25V, V_{GS} = 0V, f = 1.0 MHz		1120		pF
C_{oss}	Output Capacitance			125		
C_{rss}	Reverse Transfer Capacitance			75		
SWITCHING CHARACTERISTICS (Note 4)						
Q_g	Total Gate Charge	V_{DS}=48V, I_D=28A, V_{GS}=10V		24	31	nC
Q_{gs}	Gate-Source Charge			6		
Q_{gd}	Gate-Drain Charge			6		
t_{on}	Turn-On Time	V_{DD}= 30V, I_D = 1A, V_{GS}= 10 V, R_{GEN}= 6Ω		15	30	nS
t_r	Rise Time			57	10	
t_{off}	Turn-Off Time			38	76	
t_f	Fall Time			10	20	
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
I_S	Drain-Source Diode Forward Current	(Note 1)			28	A
V_{SD}	Drain-Source Diode Forward Voltage	I_S = 28A, V_{GS} = 0 V (Note 2)			1.2	V

RATING CHARACTERISTIC CURVES (CHM6168PAGP)

Typical Electrical Characteristics

Figure 1. Output Characteristics

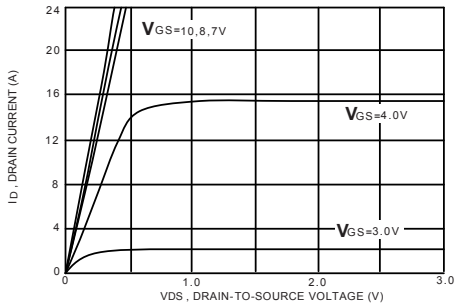


Figure 2. Transfer Characteristics

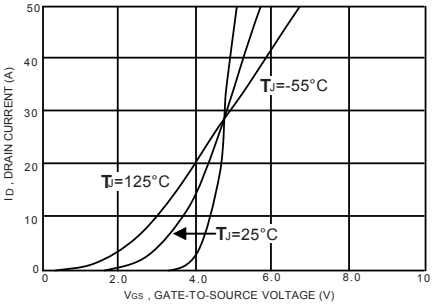


Figure 3. Gate Charge

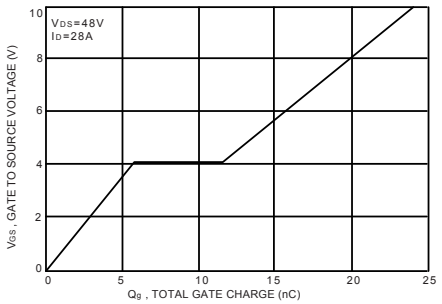


Figure 4. On-Resistance Variation with Temperature

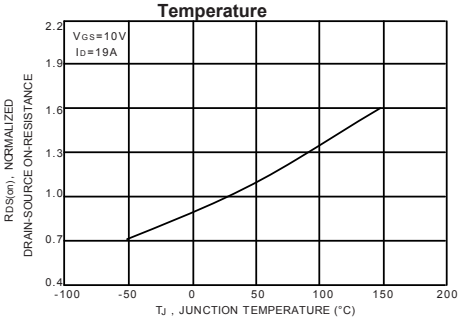


Figure 5. Gate Threshold Variation with Temperature