CHENMKO ENTERPRISE CO.,LTD

CHM2313GP-A

SURFACE MOUNT
P-Channel Enhancement Mode Field Effect Transistor

VOLTAGE 30 Volts CURRENT 3.6 Ampere

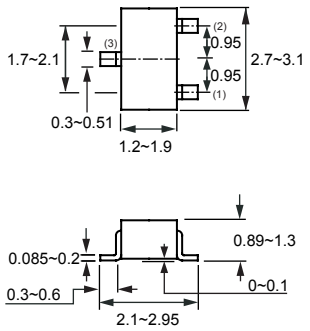
Halogens free devices

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

FEATURE
* Small flat package. (SC-59)
* High density cell design for extremely low $R_{DS(ON)}$.
* Rugged and reliable.
* High saturation current capability.

CONSTRUCTION
* P-Channel Enhancement

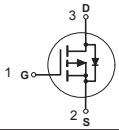
SC-59/SOT-346



Dimensions in millimeters

SC-59/SOT-346

CIRCUIT



Absolute Maximum Ratings

T_A = 25°C unless otherwise noted

Symbol	Parameter	CHM2313GP-A	Units
V_{DSS}	Drain-Source Voltage	-30	V
V_{GSS}	Gate-Source Voltage	±20	V
I_D	Maximum Drain Current - Continuous	-3.6	A
	- Pulsed (Note 3)	14.4	
P_D	Maximum Power Dissipation	1250	mW
T_J	Operating Temperature Range	-55 to 150	°C
T_{STG}	Storage Temperature Range	-55 to 150	°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)	100	°C/W

ELECTRICAL CHARACTERISTIC (CHM2313GP-A)

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	-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			+95	nA
I_{GSSR}	Gate-Body Leakage	V_{GS} = -20V, V_{DS} = 0 V			-95	nA
ON CHARACTERISTICS (Note 2)						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}, I_D =-250 μA	-1		-2.9	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=-10V, I_D=-3.6A		50	59	mΩ
		V_{GS}=-4.5V, I_D=-2.0A		75	88	
g_{FS}	Forward Transconductance	V_{DS} =-15V, I_D = -3.6A		4		S
SWITCHING CHARACTERISTICS (Note 4)						
Q_g	Total Gate Charge	V_{DS}=-15V, I_D=-10A V_{GS}=-10V		17	21	nC
Q_{gs}	Gate-Source Charge			3		
Q_{gd}	Gate-Drain Charge			3.5		
t_{on}	Turn-On Time	V_{DD}= -15V I_D = -1.0A, V_{GS} = -10 V R_{GEN} = 6 Ω		10	20	nS
t_r	Rise Time			6	12	
t_{off}	Turn-Off Time			46	90	
t_f	Fall Time			23	45	
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
I_S	Drain-Source Diode Forward Current	(Note 1)			-1.7	A
V_{SD}	Drain-Source Diode Forward Voltage	I_S = -1.7A, V_{GS} = 0 V (Note 2)			-1.2	V

RATING CHARACTERISTIC CURVES (CHM2313GP-A)

Typical Electrical Characteristics

Figure 1. Output Characteristics

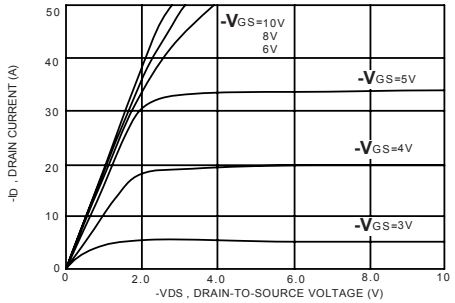


Figure 2. Transfer Characteristics

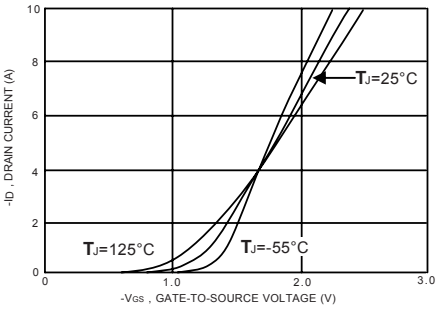


Figure 3. Gate Charge

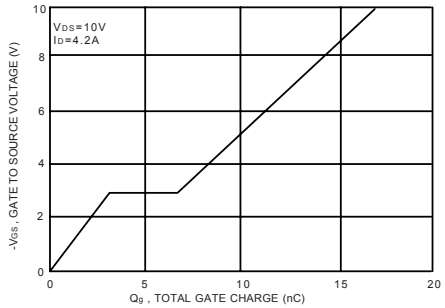


Figure 4. On-Resistance Variation with Temperature

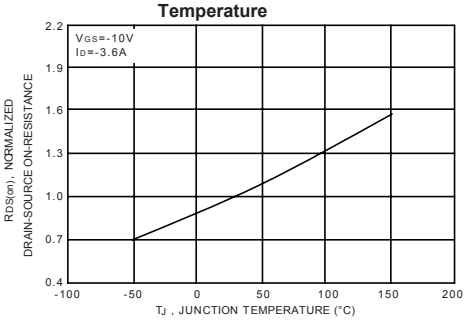


Figure 5. Gate Threshold Variation with Temperature