CHENMKO ENTERPRISE CO.,LTD

Halogens free devices

CHM3413SGP

SURFACE MOUNT
P-Channel Enhancement Mode Field Effect Transistor

VOLTAGE 20 Volts CURRENT 3.5 Ampere

APPLICATION

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

FEATURE

* Small flat package. (SC-88)
* High density cell design for extremely low $R_{DS(ON)}$.
* Rugged and reliable.
* High saturation current capability.

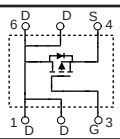
CONSTRUCTION

* P-Channel Enhancement

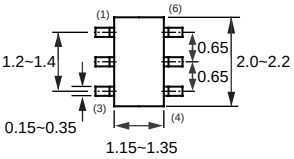
MARKING

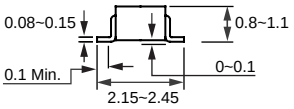
* 3413

CIRCUIT



SC-88/SOT-363





Dimensions in millimeters

SC-88/SOT-363

Absolute Maximum Ratings

T_A = 25°C unless otherwise noted

Symbol	Parameter	CHM3413SGP	Units
V_{DSS}	Drain-Source Voltage	-20	V
V_{GSS}	Gate-Source Voltage	±12	V
I_D	Maximum Drain Current - Continuous	-3.5	A
	- Pulsed	-15	
P_D	Maximum Power Dissipation	625	mW
T_J	Operating Temperature Range	-55 to 150	°C
T_{STG}	Storage Temperature Range	-55 to 150	°C

Thermal characteristics

$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient (Note 1)	250	°C/W

2007-10

ELECTRICAL CHARACTERISTIC (CHM3413SGP)

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	-20			V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = -20 V, V_{GS} = 0 V			-1	μA
I_{GSSF}	Gate-Body Leakage	V_{GS} = 12V, V_{DS} = 0 V			+100	nA
I_{GSSR}	Gate-Body Leakage	V_{GS} = -12V, V_{DS} = 0 V			-100	nA
ON CHARACTERISTICS (Note 2)						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}, I_D = -250 μA	-0.36		-0.8	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=-4.5V, I_D=-3.4A		76	95	mΩ
		V_{GS}=-2.5V, I_D=-2.4A		97	120	
g_{FS}	Forward Transconductance	V_{DS} = -5V, I_D = -2.8A		6		S
SWITCHING CHARACTERISTICS (Note 4)						
Q_g	Total Gate Charge	V_{DS}=-6V, I_D=-2.8A, V_{GS}=-4.5V		4.8	8	nC
Q_{gs}	Gate-Source Charge			1		
Q_{gd}	Gate-Drain Charge			1		
t_{on}	Turn-On Time	V_{DD}= -6V, I_D= -1.0A, V_{GEN}= -4.5 V, R_G= 6Ω		10	16	nS
t_r	Rise Time			13	23	
t_{off}	Turn-Off Time			18	25	
t_f	Fall Time			15	20	
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
I_S	Drain-Source Diode Forward Current				-1.5	A
V_{SD}	Drain-Source Diode Forward Voltage	I_S = -1.5A, V_{GS} = 0 V			-1.2	V