CHENMKO ENTERPRISE CO.,LTD

Halogens free devices

CHM1013TGP

SURFACE MOUNT
P-Channel Enhancement Mode Field Effect Transistor

VOLTAGE 20 Volts CURRENT 0.45 Ampere

APPLICATION

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

FEATURE

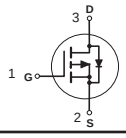
* Small surface mounting type. (SC-75/SOT-416)
* High density cell design for low $R_{DS(ON)}$.
* Suitable for high packing density.
* Rugged and reliable.
* High saturation current capability.
* Voltage controlled small signal switch.

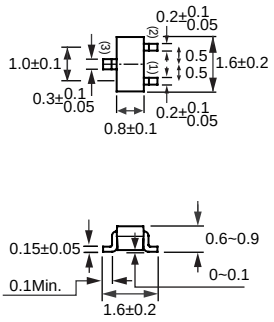
CONSTRUCTION

* P-Channel Enhancement

SC-75/SOT-416

CIRCUIT





Dimensions in millimeters

SC-75/SOT-416

Absolute Maximum Ratings

T_A = 25°C unless otherwise noted

Symbol	Parameter	CHM1013TGP	Units
V_{DSS}	Drain-Source Voltage	-20	V
V_{GSS}	Gate-Source Voltage	±12	V
I_D	Maximum Drain Current - Continuous (Note 1)	-0.45	A
	- Pulsed (Note 2)	-1.0	
I_S	Drain-Source Diose Forward Current (Note 1)	-0.3	A
P_D	Maximum Power Dissipation (Note 1)	270	mW
T_J,T_{STG}	Operating and 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%

Thermal characteristics

$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	480	°C/W

2007-11

RATING CHARACTERISTIC CURVES (CHM1013TGP)

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_{GSS}	Gate-Body Leakage	V_{GS} = 12 V, V_{DS} = 0 V			+100	nA
I_{GSS}	Gate-Body Leakage	V_{GS} = -12 V, V_{DS} = 0 V			-100	nA
ON CHARACTERISTICS (Note 2)						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}, I_D = -250 μA	-0.35		-0.8	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=-4.5V, I_D=-0.45A		0.42	0.52	mΩ
		V_{GS}=-2.5V, I_D=-0.35A		0.58	0.70	
V_{SD}	Diose Forward Voltage	V_{DS} = 0V, I_S = -0.15A			1.2	V
SWITCHING CHARACTERISTICS (Note 3)						
Q_g	Total Gate Charge	V_{DS}=-10V, I_D=-0.6A V_{GS}=-4.5V		1.5	2.0	nC
Q_{gs}	Gate-Source Charge			0.3		
Q_{gd}	Gate-Drain Charge			0.35		
t_{on}	Turn-On Time	V_{DD}= -10V I_D= -0.4A, V_{GEN}= -4.5 V R_L= 10Ω , R_{GEN}= 6 Ω		5	10	nS
t_r	Rise Time			15	25	
t_{off}	Turn-Off Time			8	15	
t_f	Fall Time			1.4	1.8	

Note : 3. Guaranteed by design , not subject to production trsting

RATING CHARACTERISTIC CURVES (CHM1013TGP)

Typical Electrical Characteristics

Figure 1. Output Characteristics

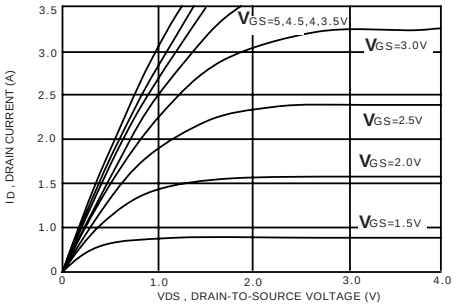


Figure 2. Transfer Characteristics

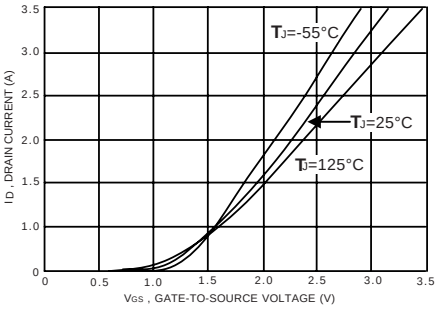


Figure 3. Gate Charge

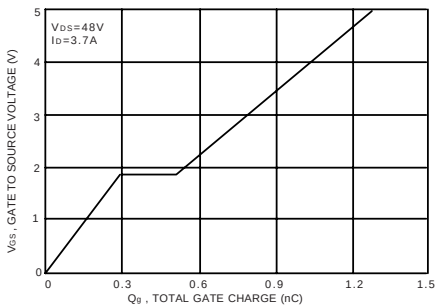


Figure 4. On-Resistance Variation with Temperature

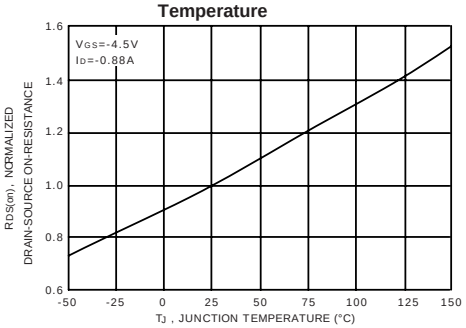


Figure 5. Gate Threshold Variation with Temperature