



Halogens free devices

**CHENMKO ENTERPRISE CO.,LTD**

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

VOLTAGE 20 Volts CURRENT 2.9 Ampere

**CHM1413WGP**

**APPLICATION**

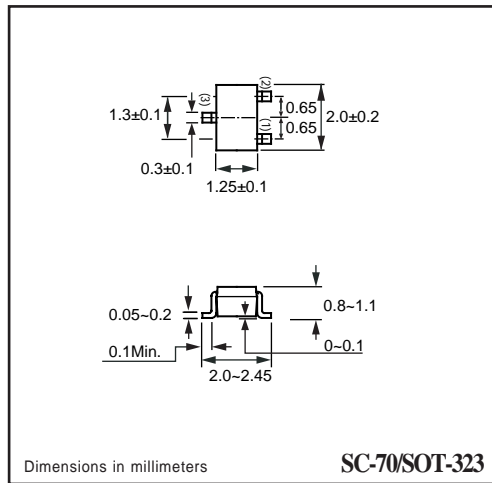
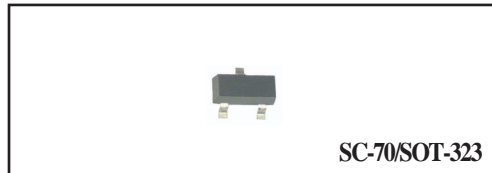
- \* Power Management in Note book
- \* Portable Equipment
- \* Battery Powered System
- \* DC/DC Converter
- \* Load Switch
- \* DSC
- \* LCD Display inverter

**FEATURE**

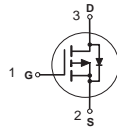
- \* Small surface mounting type. (SC-70/SOT-323)
- \* High density cell design for low Rds(ON).

**CONSTRUCTION**

- \* P-Channel Enhancement



**CIRCUIT**



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

Symbol	Parameter	CHM1413WGP	Units
$V_{DSS}$	Drain-Source Voltage	-20	V
$V_{GSS}$	Gate-Source Voltage	$\pm 12$	V
$I_D$	Maximum Drain Current - Continuous	-2.9	A
	- Pulsed	-8	
$I_S$	Drain-Source Diode Forward Current	-1.4	A
$P_D$	Maximum Power Dissipation	330	mW
$T_J, T_{STG}$	Operating and Storage Temperature Range	-55 to 150	$^\circ\text{C}$

**Thermal characteristics**

$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	105	$^\circ\text{C/W}$
-----------------	---	-----	--------------------

## RATING CHARACTERISTIC CURVES ( CHM1413WGP )

**Electrical Characteristics**  $T_A = 25^\circ\text{C}$  unless otherwise noted

Symbol	Parameter	Conditions	Min	Typ	Max	Units
--------	-----------	------------	-----	-----	-----	-------

### OFF CHARACTERISTICS

$BV_{DSS}$	Drain-Source Breakdown Voltage	$V_{GS} = 0\text{ V}, I_D = -250\ \mu\text{A}$	-20			V
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{DS} = -20\text{ V}, V_{GS} = 0\text{ V}$			-1	$\mu\text{A}$
$I_{GSS}$	Gate-Body Leakage	$V_{GS} = 12\text{ V}, V_{DS} = 0\text{ V}$			+100	nA
$I_{GSS}$	Gate-Body Leakage	$V_{GS} = -12\text{ V}, V_{DS} = 0\text{ V}$			-100	nA

### ON CHARACTERISTICS

$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = -250\ \mu\text{A}$	-0.5		-1.8	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS} = -10\text{ V}, I_D = -2.4\text{ A}$		90	130	$\text{m}\Omega$
		$V_{GS} = -4.5\text{ V}, I_D = -2.9\text{ A}$		125	150	
$V_{SD}$	Diode Forward Voltage	$V_{GS} = 0\text{ V}, I_S = -1.4\text{ A}$		-0.8	-1.2	V

### SWITCHING CHARACTERISTICS

$Q_g$	Total Gate Charge	$V_{DS} = -10\text{ V}, I_D = -2.4\text{ A}$ $V_{GS} = -10\text{ V}$		5.8	10	nC
$Q_{gs}$	Gate-Source Charge			0.8		
$Q_{gd}$	Gate-Drain Charge			1.5		
$t_{on}$	Turn-On Time	$V_{DD} = -10\text{ V}$ $I_D = -1.0\text{ A}, V_{GEN} = -10\text{ V}$ $R_{GEN} = 6\ \Omega$		9	20	nS
$t_r$	Rise Time			9	20	
$t_{off}$	Turn-Off Time			18	35	
$t_f$	Fall Time			6	20	

# RATING CHARACTERISTIC CURVES ( CHM1413WGP )

## Typical Electrical Characteristics

