

Halogens free devices



CHENMKO ENTERPRISE CO.,LTD

SURFACE MOUNT
N-Channel Enhancement Mode Field Effect Transistor
VOLTAGE 20 Volts CURRENT 2.4 Ampere

CHM7402WGP

APPLICATION

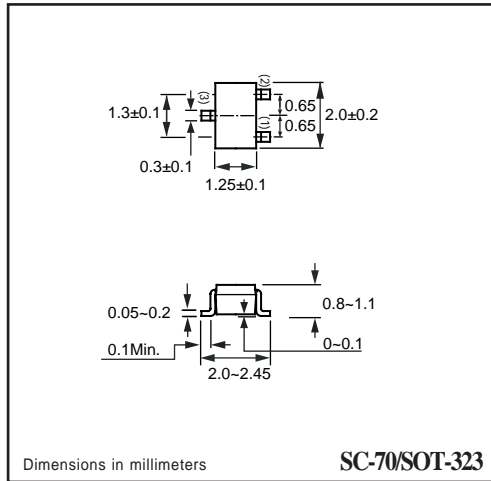
- * Power Management in Note book
- * Portable Equipment
- * Battery Powered System
- * DC/DC Converter
- * Load Switch
- * DSC
- * LCD Display inverter

FEATURE

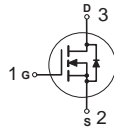
- * Small surface mounting type. (SC-70/SOT-323)
- * High density cell design for low $R_{DS(ON)}$.

CONSTRUCTION

- * N-Channel Enhancement



CIRCUIT



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

Symbol	Parameter	CHM7402WGP	Units
V_{DSS}	Drain-Source Voltage	20	V
V_{GSS}	Gate-Source Voltage	± 12	V
I_D	Maximum Drain Current - Continuous (Note 1)	2.4	A
	- Pulsed (Note 2)	6	
I_S	Drain-Source Diode Forward Current (Note 1)	1.6	A
P_D	Maximum Power Dissipation (Note 1)	330	mW
T_J, T_{STG}	Operating and Storage Temperature Range	-55 to 150	$^\circ\text{C}$

Note : 1. Surface Mounted on FR4 Board , $t \leq 10\text{sec}$
 2. Pulse Test , Pulse width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$

Thermal characteristics

$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	105	$^\circ\text{C/W}$
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RATING CHARACTERISTIC CURVES (CHM7402WGP)

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

Symbol	Parameter	Conditions	Min	Typ	Max	Units
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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	μA
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 (Note 2)

$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\ \mu\text{A}$	0.35		0.85	V
$R_{DS(on)}$	Static Drain-Source On-Resistance	$V_{GS}=4.5\text{V}, I_D=4\text{A}$		60	65	m Ω
		$V_{GS}=2.5\text{V}, I_D=3.4\text{A}$		67	80	
V_{SD}	Diode Forward Voltage	$V_{GS} = 0\text{V}, I_S = 1.6\text{ A}$		0.8	1.2	V

SWITCHING CHARACTERISTICS (Note 3)

Q_g	Total Gate Charge	$V_{DS}=6\text{V}, I_D=2.8\text{A}$ $V_{GS}=4.5\text{V}$		4.8	8	nC
Q_{gs}	Gate-Source Charge			1.0		
Q_{gd}	Gate-Drain Charge			1.0		
t_{on}	Turn-On Time	$V_{DD}= 6\text{V}$ $I_D = 1.0\text{A}, V_{GEN} = 4.5\text{ V}$ $R_L = 6\ \Omega, R_{GEN} = 6\ \Omega$		8	14	nS
t_r	Rise Time			12	18	
t_{off}	Turn-Off Time			30	35	
t_f	Fall Time			12	16	

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

RATING CHARACTERISTIC CURVES (CHM7402WGP)

Typical Electrical Characteristics

