CHENMKO ENTERPRISE CO.,LTD

Halogens free devices

CHM1024VGP

SURFACE MOUNT
N-Channel Enhancement Mode Field Effect Transistor

VOLTAGE 20 Volts CURRENT 700 mAmpere

APPLICATION

* Power Management in Note book
* Battery Powered System
* DC/DC Converter
* LCD Display inverter

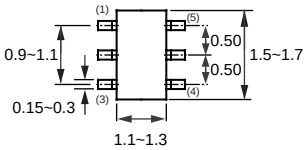
FEATURE

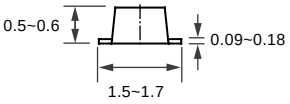
* Small surface mounting type. (SOT-563)
* Low-Voltage Operation
* High-Speed Circuits

CONSTRUCTION

Silicon N-Channel MOSFET

SOT-563

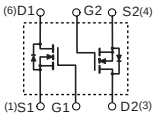




Dimensions in millimeters

SOT-563

CIRCUIT



Absolute Maximum Ratings

T_A = 25°C unless otherwise noted

Symbol	Parameter	CHM1024VGP	Units
V_{DSS}	Drain-Source Voltage	20	V
V_{GSS}	Gate-Source Voltage - Continuous	±12	V
I_D	Drain Current - Continuous	700	mA
	T_A=70°C	400	mA
I_{DM}	Pulsed Drain Current	400	mA
I_S	Continuous Source Current(Diode Conduction)	1.0	A
P_D	Power Dissipation (Note2)	270	mW
T_J	Operating Temperature Range	-55 to 150	°C
T_{STG}	Storage Temperature Range	-55 to 150	°C

ELECTRICAL CHARACTERISTIC (CHM1024VGP)

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 = 250μA	20			V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = 20 V, V_{GS} = 0 V			1	μA
		T_J=55°C			5	μA
I_{GSSF}	Gate - Body Leakage, Forward	V_{GS} = 12 V, V_{DS} = 0 V			100	nA
I_{GSSR}	Gate - Body Leakage, Reverse	V_{GS} = -12 V, V_{DS} = 0 V			-100	nA
ON CHARACTERISTICS						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}, I_D = 250 μA	0.4		1.0	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS} = 4.5 V, I_D = 600 mA		240	360	mΩ
		V_{GS} = 2.5 V, I_D = 500 mA		300	420	
g_{FS}	Forward Transconductance	V_{DS} = 10 V, I_D = 400 mA		1.0		S
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS} = 10V, V_{GS} = 0V, f = 1.0 MHz		70		pF
C_{oss}	Output Capacitance			20		
C_{rss}	Reverse Transfer Capacitance			8		
SWITCHING CHARACTERISTICS (Note 4)						
Q_g	Total Gate Charge	V_{DS}=10V, I_D=0.6A, V_{GS}=4.5V		1.06	1.38	nC
Q_{gs}	Gate-Source Charge			0.18		
Q_{gd}	Gate-Drain Charge			0.32		
t_{on}	Turn-On Time	V_{DD}= 10V, I_D= 0.5A, V_{GS}= 4.5 V, R_{GEN}= 1Ω		18	26	nS
t_r	Rise Time			20	28	
t_{off}	Turn-Off Time			70	110	
t_f	Fall Time			25	40	

RATING CHARACTERISTIC CURVES (CHM1024VGP)

Typical Electrical Characteristics

Figure 1. Output Characteristics

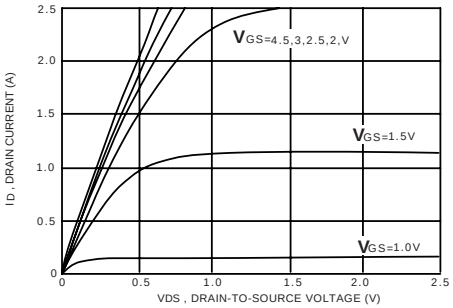


Figure 2. Transfer Characteristics

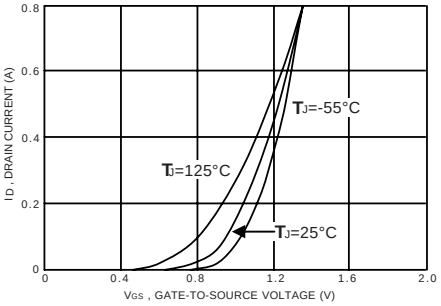


Figure 3. Gate Charge

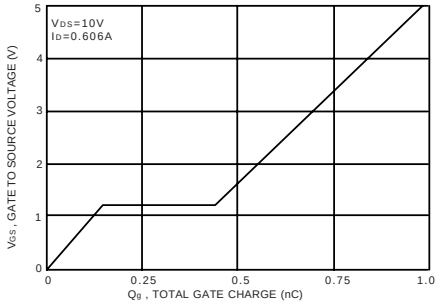


Figure 4. On-Resistance Variation with Temperature