CHENMKO ENTERPRISE CO.,LTD

CHM3055ZPT

SURFACE MOUNT
N-Channel Enhancement Mode Field Effect Transistor

VOLTAGE 60 Volts CURRENT 4.0 Ampere

Lead free devices

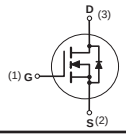
APPLICATION
* Servo motor control.
* Power MOSFET gate drivers.
* Other switching applications.

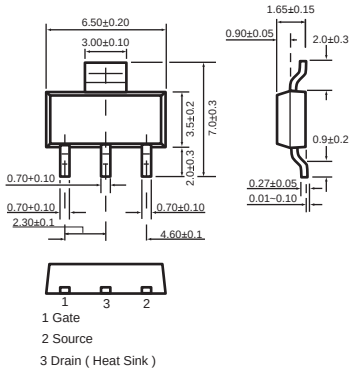
FEATURE
* Small package. (SC-73/SOT-223)
* High density cell design for extremely low $R_{DS(ON)}$.
* Rugged and reliable.

CONSTRUCTION
* N-Channel Enhancement

SC-73/SOT-223

CIRCUIT





Dimensions in millimeters

SC-73/SOT-223

Absolute Maximum Ratings T_A = 25°C unless otherwise noted

Symbol	Parameter	CHM3055ZPT	Units
V_{DSS}	Drain-Source Voltage	60	V
V_{GSS}	Gate-Source Voltage	±20	V
I_D	Maximum Drain Current - Continuous	4.0	A
	- Pulsed (Note 3)	25	
P_D	Maximum Power Dissipation	3000	mW
T_J	Operating Temperature Range	-55 to 150	°C
T_{STG}	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%
3. Repetitive Rating , Pulse width linited by maximum junction temperature
4. Guaranteed by design , not subject to production trsting

Thermal characteristics

$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient (Note 1)	42	°C/W

ELECTRICAL CHARACTERISTIC (CHM3055ZPT)

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	60			V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = 48 V, V_{GS} = 0 V			10	µA
I_{GSSF}	Gate-Body Leakage	V_{GS} = 20V, V_{DS} = 0 V			+100	nA
I_{GSSR}	Gate-Body Leakage	V_{GS} = -20V, V_{DS} = 0 V			-100	nA
ON CHARACTERISTICS (Note 2)						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}, I_D = 250 µA	2		4	V
$R_{DS(ON)}$		V_{GS}=10V, I_D=4.0A		75	100	mΩ
g_{FS}	Forward Transconductance	V_{DS} =15V, I_D = 4.0A	3	4		S
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS} = 25V, V_{GS} = 0V, f = 1.0 MHz		335		pF
C_{oss}	Output Capacitance			150		
C_{rss}	Reverse Transfer Capacitance			40		
SWITCHING CHARACTERISTICS (Note 4)						
Q_g	Total Gate Charge	V_{DS}=48V, I_D=4.0A, V_{GS}=10V		10	13	nC
Q_{gs}	Gate-Source Charge			2.4		
Q_{gd}	Gate-Drain Charge			4.0		
t_{on}	Turn-On Time	V_{DD}= 25V, I_D= 1.2A, V_{GS}= 10 V, R_{GEN}= 50Ω		17	25	nS
t_r	Rise Time			24	50	
t_{off}	Turn-Off Time			41	65	
t_f	Fall Time			33	60	
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
I_S	Drain-Source Diode Forward Current	(Note 1)			2.5	A
V_{SD}	Drain-Source Diode Forward Voltage	I_S = 4.0A, V_{GS} = 0 V (Note 2)			1.2	V