



CHENMKO ENTERPRISE CO.,LTD

CHM1273XGP

SURFACE MOUNT

N-Channel Enhancement Mode Field Effect Transistor

VOLTAGE 60 Volts CURRENT 2 Ampere

Halogens free devices

APPLICATION

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

FEATURE

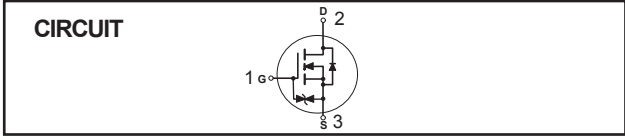
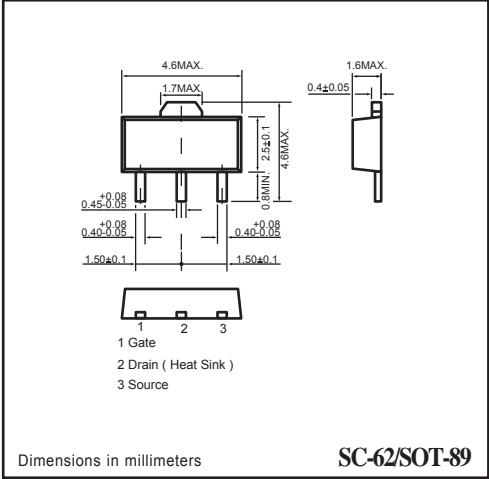
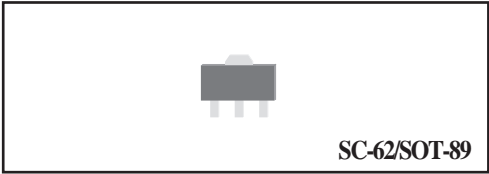
- * Small surface mounting type. (SC-62/SOT-89)
- * High density cell design for extremely low $R_{DS(ON)}$.
- * Rugged and reliable.
- * High saturation current capability.

CONSTRUCTION

- * N-Channel Enhancement

MARKING

- * 1273



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

Symbol	Parameter	CHM1273XGP	Units
V_{DSS}	Drain-Source Voltage	60	V
V_{GSS}	Gate-Source Voltage	± 20	V
I_D	Maximum Drain Current - Continuous	2	A
	- Pulsed (Note 3)	4	
P_D	Maximum Power Dissipation	2	W
T_J	Operating Temperature Range	-55 to 150	$^\circ\text{C}$
T_{STG}	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 $\leq 2\%$
 3. Repetitive Rating , Pulse width limited by maximum junction temperature
 4. Guaranteed by design , not subject to production trsting

RATING CHARACTERISTIC CURVES (CHM1273XGP)

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	$V_{GS} = 0\text{ V}, I_D = 10\ \mu\text{A}$	60			V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 60\text{ V}, V_{GS} = 0\text{ V}$			10	μA
I_{GSSF}	Gate-Body Leakage	$V_{GS} = 20\text{ V}, V_{DS} = 0\text{ V}$			+10	μA
I_{GSSR}	Gate-Body Leakage	$V_{GS} = -20\text{ V}, V_{DS} = 0\text{ V}$			-10	μA

ON CHARACTERISTICS (Note 2)

$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = 10\text{ V}, I_D = 1\text{ mA}$	1.0	1.7	2.5	V
$R_{DS(on)}$	Static Drain-Source On-Resistance	$V_{GS}=10\text{ V}, I_D=0.5\text{ A}$		0.24	0.65	Ω
		$V_{GS}=4.0\text{ V}, I_D=0.5\text{ A}$		0.31	1.00	
g_{FS}	Forward Transconductance	$V_{DS} = 10\text{ V}, I_D = 0.5\text{ A}$	400			mS

Dynamic Characteristics

g_{FS}	Forward Transconductance	$V_{DS} = 10\text{ V}, I_D = 0.5\text{ A}$	400			mS
C_{iss}	Input Capacitance	$V_{DS} = 10\text{ V}, V_{GS} = 0\text{ V},$ $f = 1.0\text{ MHz}$		220		pF
C_{oss}	Output Capacitance			105		
C_{rss}	Reverse Transfer Capacitance			16		

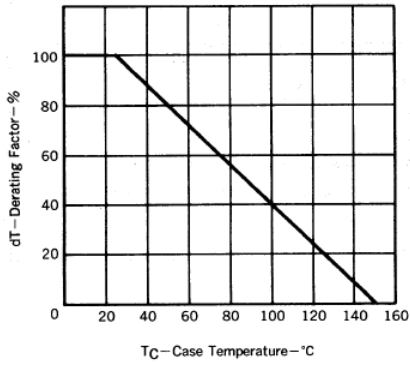
SWITCHING CHARACTERISTICS (Note 4)

t_{on}	Turn-On Time	$V_{DD} = 25\text{ V}$ $I_D = 0.5\text{ A}, V_{GS} = 10\text{ V}$ $R_{GEN} = 10\ \Omega, R_L = 50\ \Omega$		15		nS
t_r	Rise Time			35		
t_{off}	Turn-Off Time			380		
t_f	Fall Time			120		

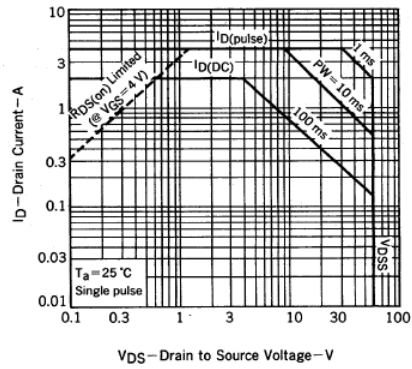
RATING CHARACTERISTIC CURVES (CHM1273XGP)

Typical Electrical Characteristics

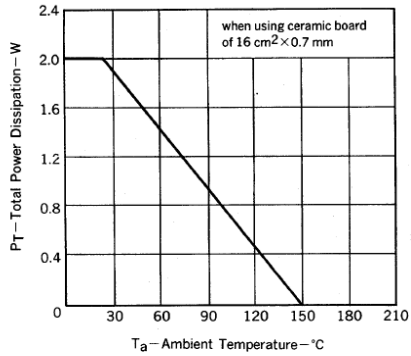
DERATING FACTOR OF FORWARD BIAS SAFE OPERATING AREA



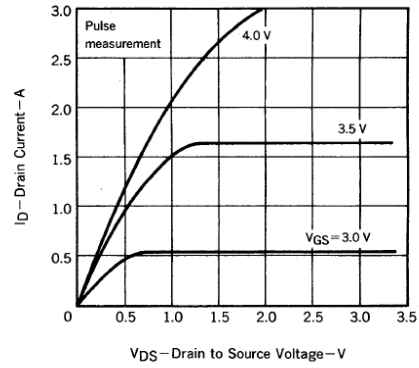
FORWARD BIAS SAFE OPERATING AREA



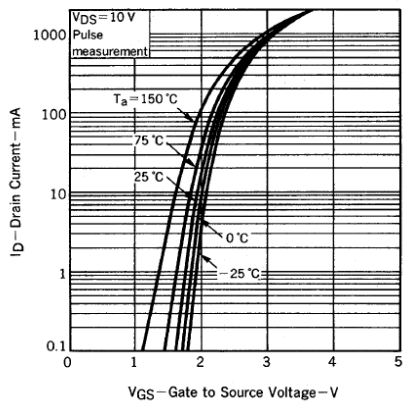
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



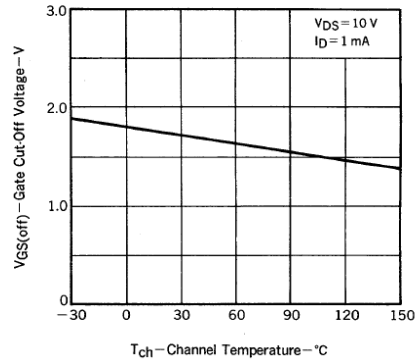
DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE



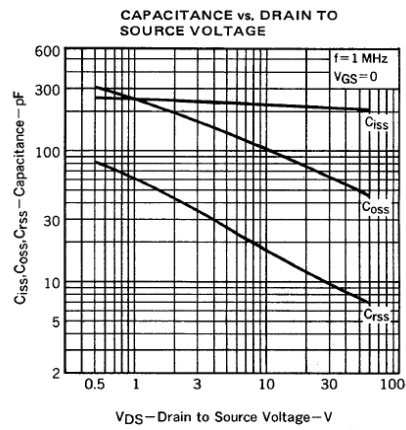
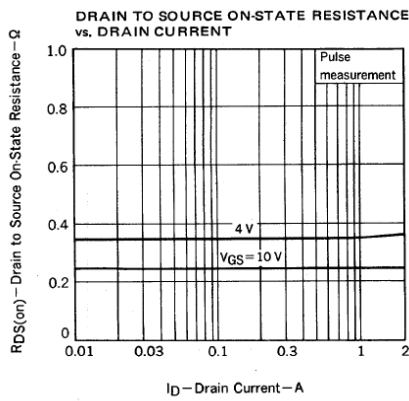
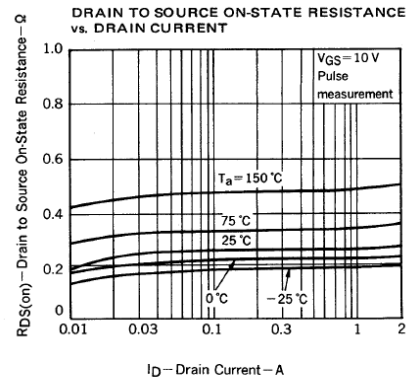
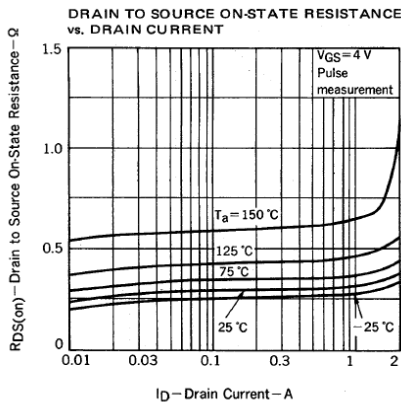
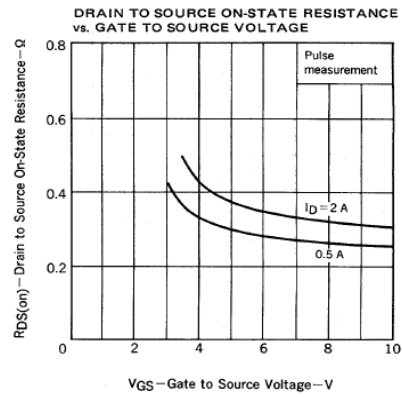
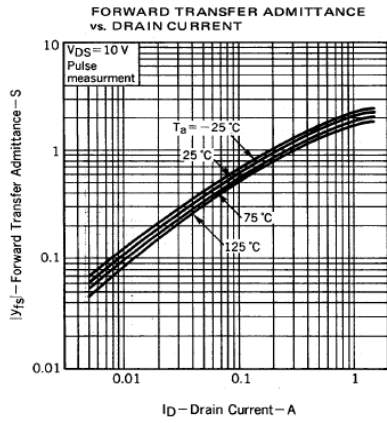
TRANSFER CHARACTERISTICS



GATE TO SOURCE CUTOFF VOLTAGE vs. CHANNEL TEMPERATURE



RATING CHARACTERISTIC CURVES (CHM1273XGP)



RATING CHARACTERISTIC CURVES (CHM1273XGP)

