CHENMKO ENTERPRISE CO.,LTD

CHM1273PT

SURFACE MOUNT
N-Channel Enhancement Mode Field Effect Transistor

VOLTAGE 60 Volts CURRENT 2 Ampere

Lead free devices

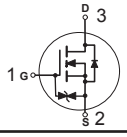
APPLICATION
* Servo motor control.
* Power MOSFET gate drivers.
* Other switching applications.

FEATURE
* Small surface mounting type. (SC-59)
* High density cell design for extremely low $R_{DS(ON)}$.
* Rugged and reliable.
* High saturation current capability.

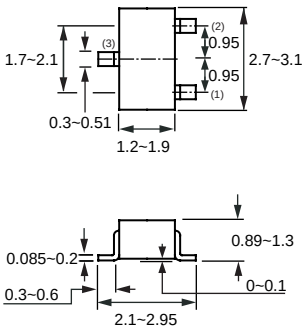
CONSTRUCTION
* N-Channel Enhancement

MARKING
* 1273

CIRCUIT



SC-59/SOT-346



Dimensions in millimeters

SC-59/SOT-346

Absolute Maximum Ratings

T_A = 25°C unless otherwise noted

Symbol	Parameter	CHM1273PT	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	0.5	W
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

RATING CHARACTERISTIC CURVES (CHM1273PT)

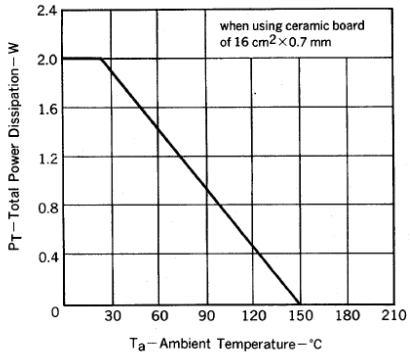
Electrical Characteristics T_A = 25°C unless otherwise noted

Symbol	Parameter	Conditions	Min	Typ	Max	Units
OFF CHARACTERISTICS						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS} = 0 V, I_D = 10 μA	60			V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = 60 V, V_{GS} = 0 V			10	μA
I_{GSSF}	Gate-Body Leakage	V_{GS} = 20V, V_{DS} = 0 V			+10	uA
I_{GSSR}	Gate-Body Leakage	V_{GS} = -20V, V_{DS} = 0 V			-10	uA
ON CHARACTERISTICS (Note 2)						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = 10V, I_D = 1mA	1.0	1.7	2.5	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=10V, I_D=0.5A		0.24	0.65	Ω
		V_{GS}=4.0V, I_D=0.5A		0.31	1.00	
g_{FS}	Forward Transconductance	V_{DS} =10V, I_D = 0.5A	400			mS
Dynamic Characteristics						
g_{FS}	Forward Transconductance	V_{DS} =10V, I_D = 0.5A	400			mS
C_{iss}	Input Capacitance	V_{DS} = 10V, V_{GS} = 0V, f = 1.0 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}= 25V		15		nS
t_r	Rise Time	I_D = 0.5A, V_{GS} = 10 V		35		
t_{off}	Turn-Off Time	R_{GEN}= 10Ω, R_L= 50Ω		380		
t_f	Fall Time			120		

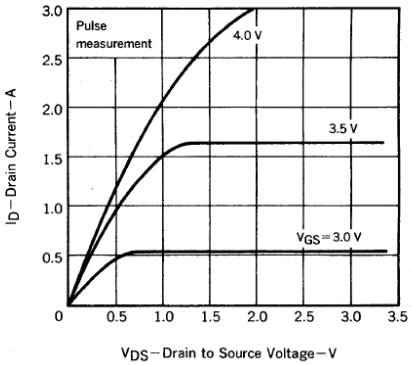
RATING CHARACTERISTIC CURVES (CHM1273PT)

Typical Electrical Characteristics

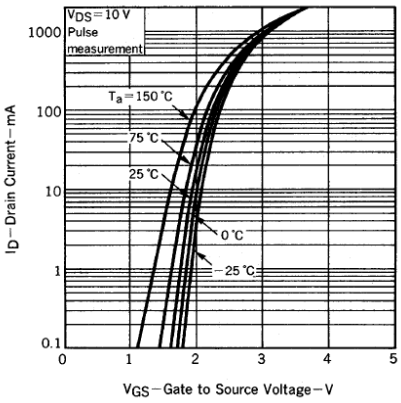
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



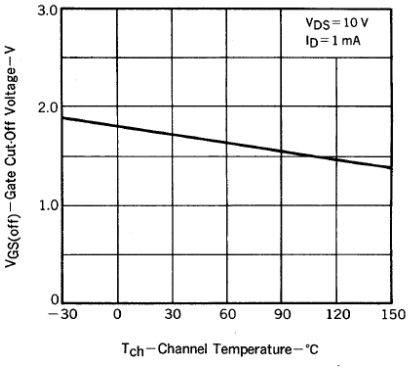
DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE



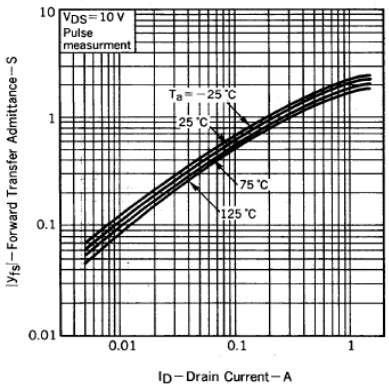
TRANSFER CHARACTERISTICS



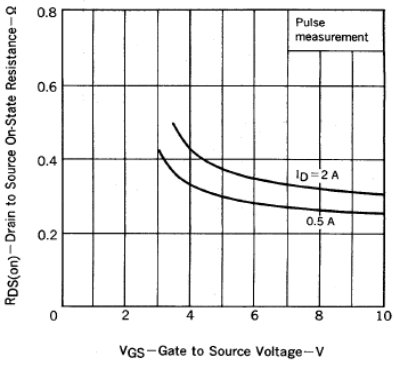
GATE TO SOURCE CUTOFF VOLTAGE vs. CHANNEL TEMPERATURE



FORWARD TRANSFER ADMITTANCE vs. DRAIN CURRENT

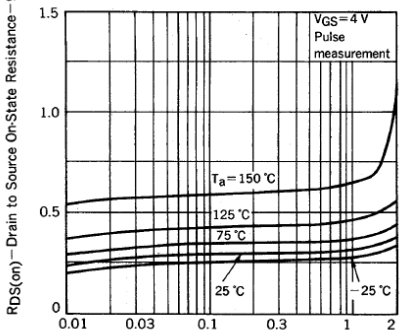


DRAIN TO SOURCE ON-STATE RESISTANCE vs. GATE TO SOURCE VOLTAGE

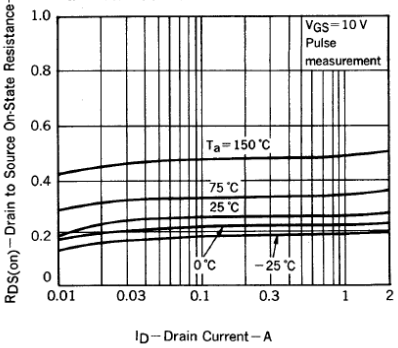


RATING CHARACTERISTIC CURVES (CHM1273PT)

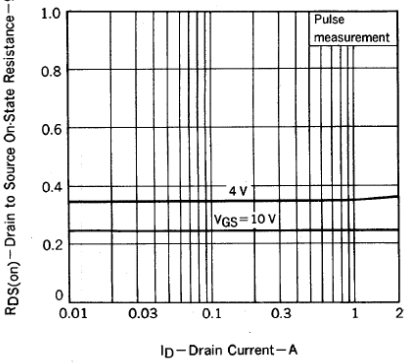
DRAIN TO SOURCE ON-STATE RESISTANCE vs. DRAIN CURRENT



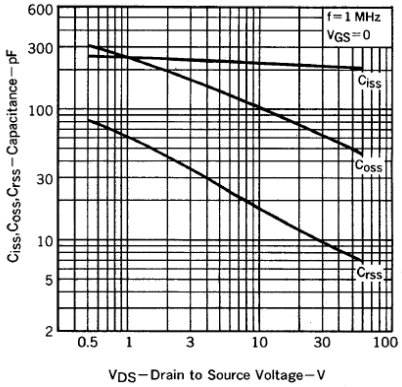
DRAIN TO SOURCE ON-STATE RESISTANCE vs. DRAIN CURRENT



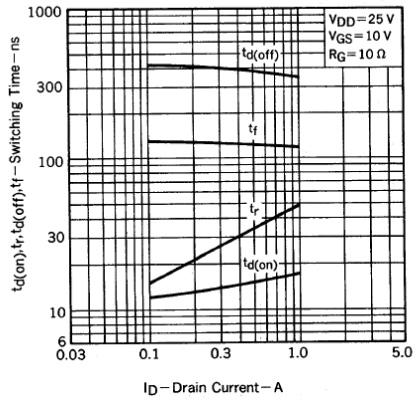
DRAIN TO SOURCE ON-STATE RESISTANCE vs. DRAIN CURRENT



CAPACITANCE vs. DRAIN TO SOURCE VOLTAGE



SWITCHING CHARACTERISTICS



SOURCE TO DRAIN DIODE FORWARD VOLTAGE