CHENMKO ENTERPRISE CO.,LTD

Halogens free devices

CHM1592GP

SURFACE MOUNT
N-Channel Enhancement Mode Field Effect Transistor

VOLTAGE 60 Volts CURRENT 500 mAmpere

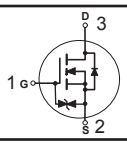
APPLICATION
* Servo motor control.
* Power MOSFET gate drivers.
* Other switching applications.

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

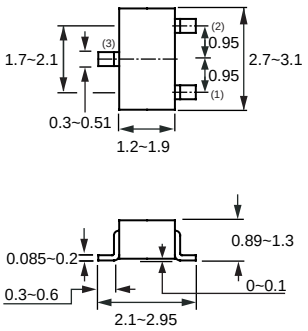
CONSTRUCTION
* N-Channel Enhancement

MARKING
* 1592

CIRCUIT



SC-59/SOT-346



Dimensions in millimeters

SC-59/SOT-346

Absolute Maximum Ratings T_A = 25°C unless otherwise noted

Symbol	Parameter	CHM1592GP	Units
V_{DSS}	Drain-Source Voltage	60	V
V_{GSS}	Gate-Source Voltage	±20	V
I_D	Maximum Drain Current - Continuous	500	mA
	- Pulsed (Note 3)	1000	
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

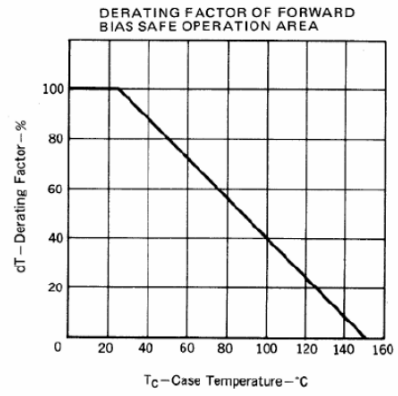
RATING CHARACTERISTIC CURVES (CHM1592GP)

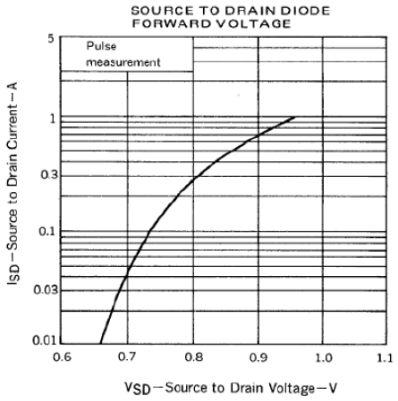
Electrical Characteristics T_A = 25°C unless otherwise noted

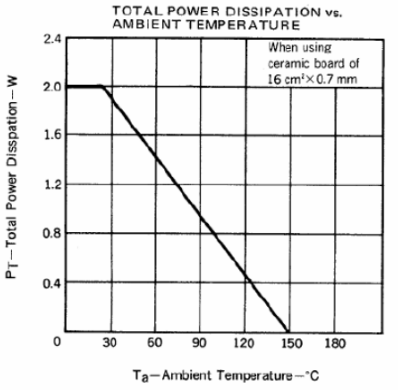
Symbol	Parameter	Conditions	Min	Typ	Max	Units
OFF CHARACTERISTICS						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS} = 0 V, I_D = 10 μA	60			V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = 60 V, V_{GS} = 0 V			10	μA
I_{GSSF}	Gate-Body Leakage	V_{GS} = 20V, V_{DS} = 0 V			+10	uA
I_{GSSR}	Gate-Body 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	0.8	1.2	2.0	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=10V, I_D=0.3A		1.2	2.0	Ω
		V_{GS}=4.0V, I_D=0.3A		1.6	2.5	
g_{FS}	Forward Transconductance	V_{DS} =10V, I_D = 0.5A	400	570		mS
Dynamic Characteristics						
g_{FS}	Forward Transconductance	V_{DS} =10V, I_D = 0.5A	400	570		mS
C_{iss}	Input Capacitance	V_{DS} = 10V, V_{GS} = 0V, f = 1.0 MHz		52		pF
C_{oss}	Output Capacitance			34		
C_{rss}	Reverse Transfer Capacitance			7		
SWITCHING CHARACTERISTICS (Note 4)						
t_{on}	Turn-On Time	V_{DD}= 10V		60		nS
t_r	Rise Time	I_D = 0.3A, V_{GS} = 4 V		150		
t_{off}	Turn-Off Time	R_{GEN}= 10Ω, R_L= 33Ω		150		
t_f	Fall Time			100		

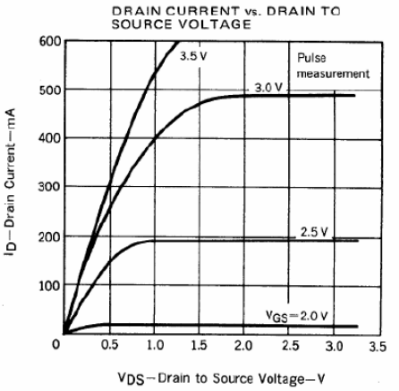
RATING CHARACTERISTIC CURVES (CHM1592GP)

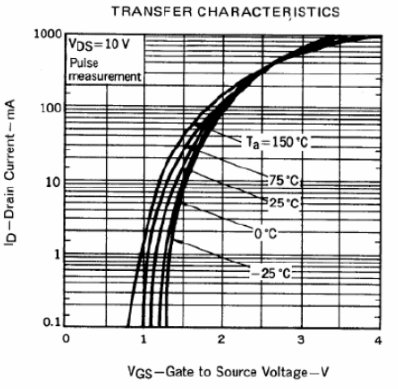
Typical Electrical Characteristics

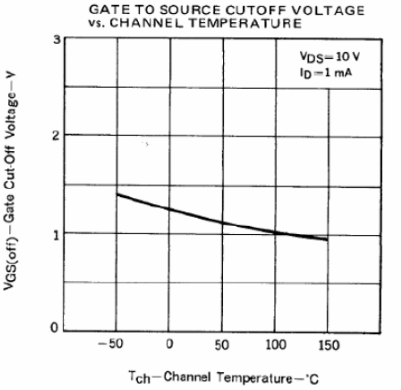






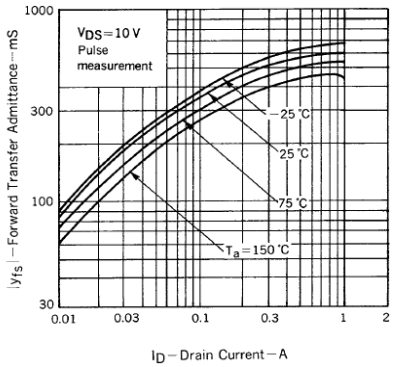




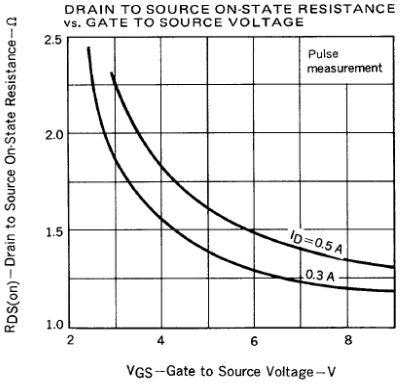


RATING CHARACTERISTIC CURVES (CHM1592GP)

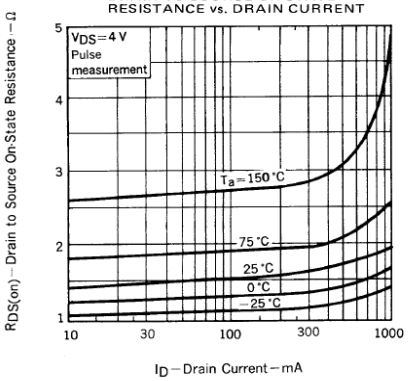
FORWARD TRANSFER ADMITTANCE vs. DRAIN CURRENT



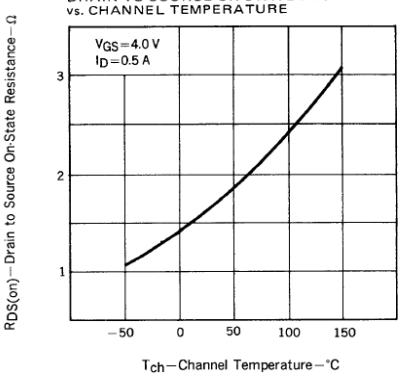
DRAIN TO SOURCE ON-STATE RESISTANCE vs. GATE TO SOURCE VOLTAGE



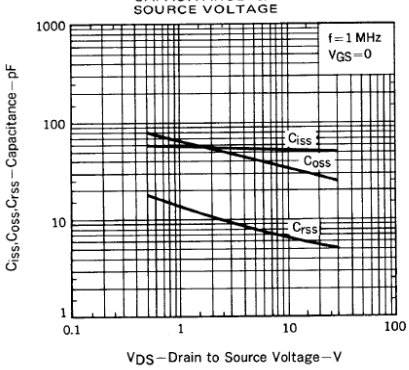
DRAIN TO SOURCE ON-STATE RESISTANCE vs. DRAIN CURRENT



DRAIN TO SOURCE ON-STATE RESISTANCE vs. CHANNEL TEMPERATURE



CAPACITANCE vs. DRAIN TO SOURCE VOLTAGE



SWITCHING CHARACTERISTICS