

Halogens free devices



**CHENMKO ENTERPRISE CO.,LTD**

**SURFACE MOUNT**

**Dual Enhancement Mode Field Effect Transistor**

N-channel: VOLTAGE 30 Volts CURRENT 0.2 Ampere

P-channel: VOLTAGE 30 Volts CURRENT 0.2 Ampere



CHM3U22GESGP

**APPLICATION**

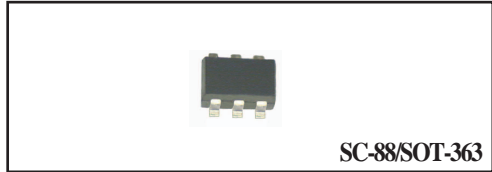
\* High speed switching , Analog switching

**FEATURE**

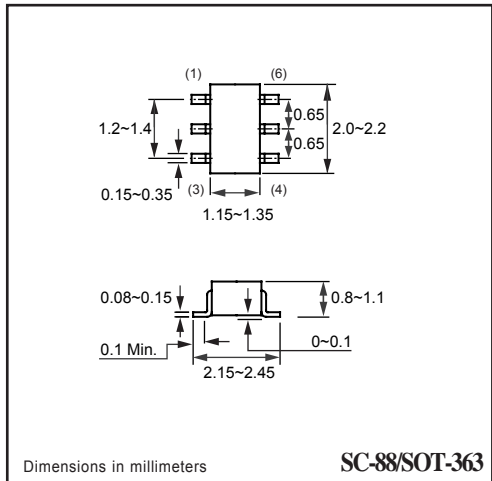
- \* Small flat package. (SOT-H63 )
- \* Super high dense cell design for extremely low R<sub>DS(ON)</sub>.
- \* Lead free product is acquired.
- \* High power and current handing capability.
- \* ESD protect in input gate 2KV

**CONSTRUCTION**

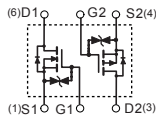
\* N-Channel & P-Channel Enhancement in the package



SC-88/SOT-363



**CIRCUIT**



**Absolute Maximum Ratings** T<sub>A</sub> = 25°C unless otherwise noted

Symbol	Parameter	N-Channel	P-Channel	Units
V <sub>DSS</sub>	Drain-Source Voltage	30	-30	V
V <sub>GSS</sub>	Gate-Source Voltage	±8	±8	V
I <sub>D</sub>	Maximum Drain Current - Continuous	200	-200	mA
	- Pulsed (Note 3)	400	-400	
P <sub>D</sub>	Maximum Power Dissipation	150		mW
T <sub>J</sub>	Operating Temperature Range	-55 to 125		°C
T <sub>STG</sub>	Storage Temperature Range	-55 to 125		°C

Note : 1. Surface Mounted on FR4 Board , t <= 10sec  
 2. Pulse Test , Pulse width <= 300us , Duty Cycle <= 2%  
 3. Repetitive Rating , Pulse width limited by maximum junction temperature  
 4. Guaranteed by design , not subject to production testing

## ELECTRICAL CHARACTERISTIC ( CHM3U22GESGP )

### N-Channel Electrical Characteristics $T_A = 25^\circ\text{C}$ unless otherwise noted

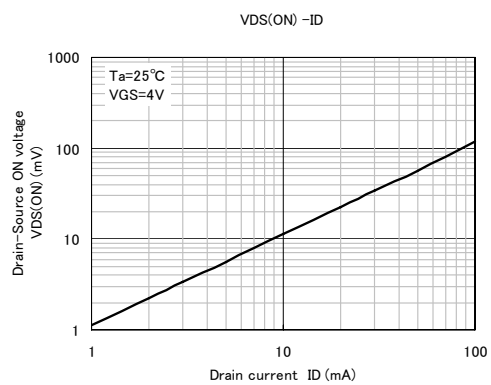
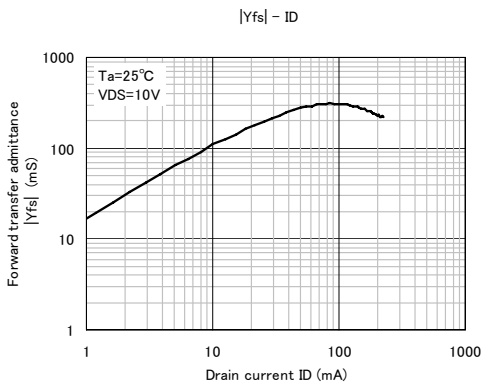
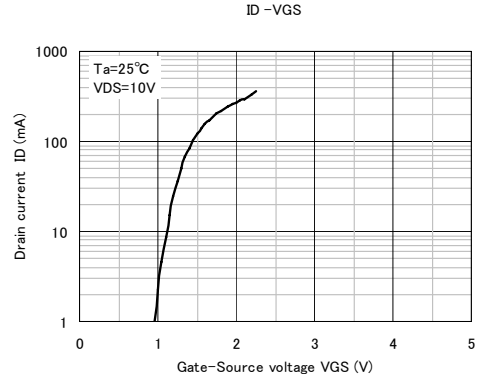
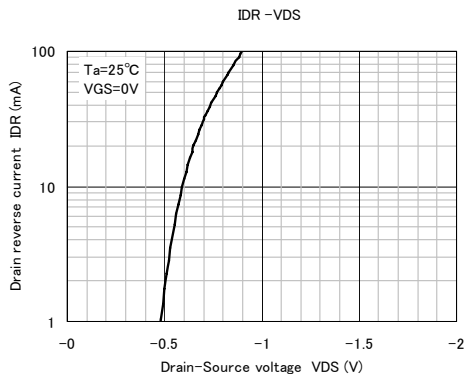
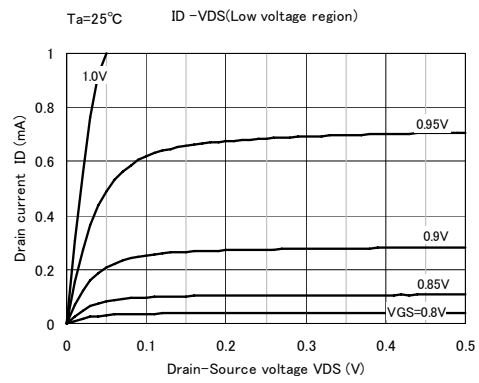
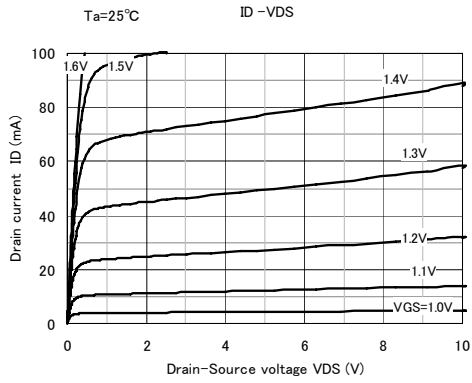
SYMBOL	Parameter	Test conditions				Unit
			Min	Typ	Max	
V(BR)DSS	Drain-source breakdown voltage	$I_D=100\mu\text{A}$ , $V_{GS}=0\text{V}$	30	-	-	V
IGSS	Gate-source leak current	$V_{GS}=\pm 5\text{V}$ , $V_{DS}=0\text{V}$	-	-	$\pm 0.5$	$\mu\text{A}$
IDSS	Zero gate voltage drain current	$V_{DS}=30\text{V}$ , $V_{GS}=0\text{V}$	-	-	1.0	$\mu\text{A}$
V <sub>th</sub>	Gate threshold voltage	$I_D=250\mu\text{A}$ , $V_{DS}=V_{GS}$	0.6	-	1.2	V
Y <sub>fs</sub>	Forward transfer admittance	$V_{DS}=10\text{V}$ , $I_D=0.1\text{A}$	-	300	-	mS
RDS(ON)	Static drain-source on-state resistance	$I_D=100\text{mA}$ , $V_{GS}=4.0\text{V}$	-	1.1	-	$\Omega$
C <sub>iss</sub>	Input capacitance	$V_{DS}=10\text{V}$ , $V_{GS}=0\text{V}$ , $f=1\text{MHz}$	-	33	-	pF
C <sub>oss</sub>	Output capacitance		-	6.8	-	
t <sub>on</sub>	Switching time	$V_{DD}=5\text{V}$ , $I_D=10\text{mA}$	-	12	-	ns
t <sub>off</sub>		$V_{GS}=0\sim 5\text{V}$	-	80	-	

### P-Channel Electrical Characteristics $T_A = 25^\circ\text{C}$ unless otherwise noted

SYMBOL	Parameter	Test conditions				Unit
			Min	Typ	Max	
V(BR)DSS	Drain-source breakdown voltage	$I_D=-100\mu\text{A}$ , $V_{GS}=0\text{V}$	-30	-	-	V
IGSS	Gate-source leak current	$V_{GS}=\pm 5\text{V}$ , $V_{DS}=0\text{V}$	-	-	$\pm 0.5$	$\mu\text{A}$
IDSS	Zero gate voltage drain current	$V_{DS}=-30\text{V}$ , $V_{GS}=0\text{V}$	-	-	-1.0	$\mu\text{A}$
V <sub>th</sub>	Gate threshold voltage	$I_D=-250\mu\text{A}$ , $V_{DS}=V_{GS}$	-0.6	-	-1.2	V
Y <sub>fs</sub>	Forward transfer admittance	$V_{DS}=-10\text{V}$ , $I_D=-0.1\text{A}$	-	220	-	mS
RDS(ON)	Static drain-source on-state resistance	$I_D=-100\text{mA}$ , $V_{GS}=-4.0\text{V}$	-	3.0	-	$\Omega$
C <sub>iss</sub>	Input capacitance	$V_{DS}=-10\text{V}$ , $V_{GS}=0\text{V}$ , $f=1\text{MHz}$	-	35	-	pF
C <sub>oss</sub>	Output capacitance		-	7.3	-	
t <sub>on</sub>	Switching time	$V_{DD}=-5\text{V}$ , $I_D=-10\text{mA}$	-	14	-	ns
t <sub>off</sub>		$V_{GS}=0\sim -5\text{V}$	-	100	-	

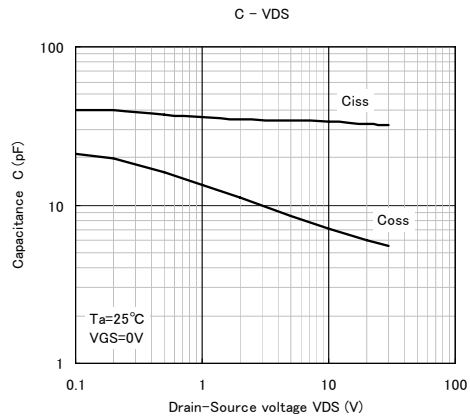
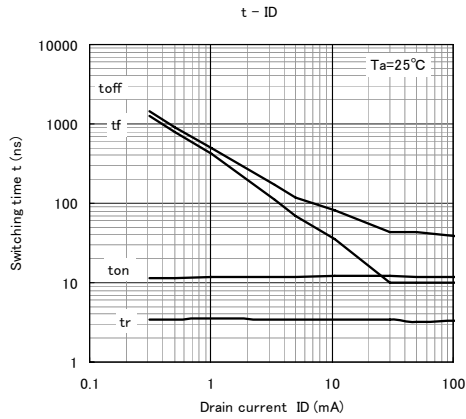
# RATING CHARACTERISTIC CURVES ( CHM3U22GESGP )

## N-MOSFET Typical Electrical Characteristics

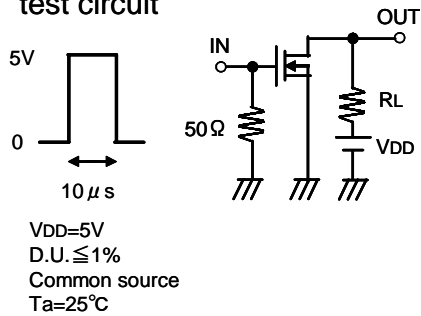


# RATING CHARACTERISTIC CURVES ( CHM3U22GESGP )

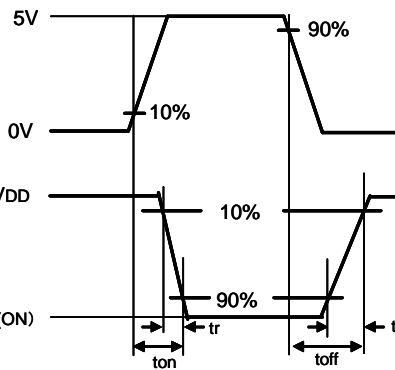
## N-MOSFET Typical Electrical Characteristics



### test circuit



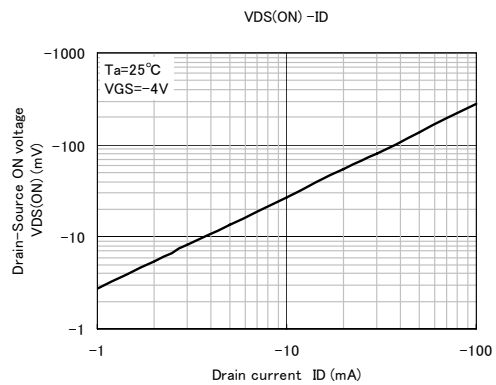
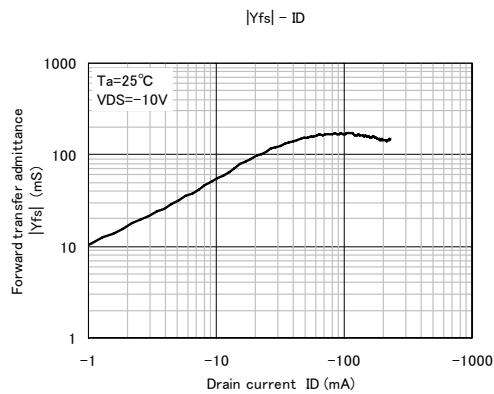
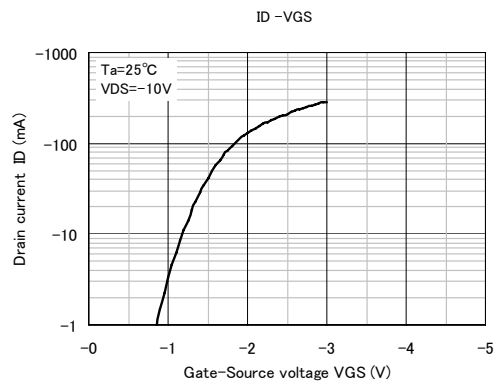
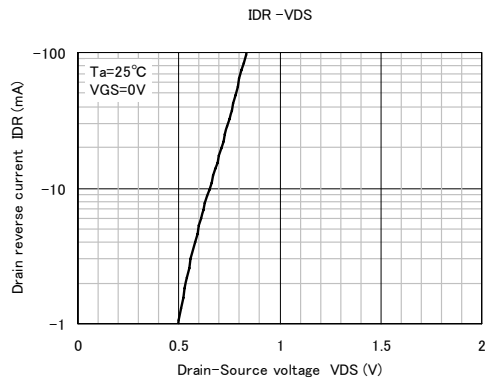
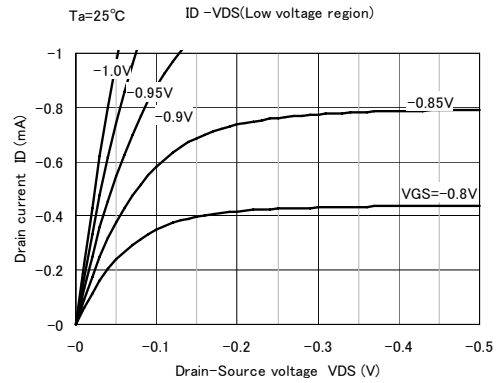
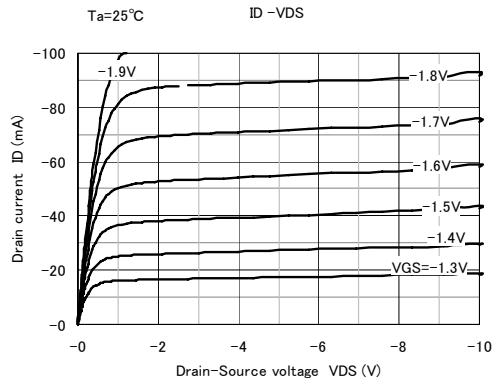
### input waveform



### output waveform

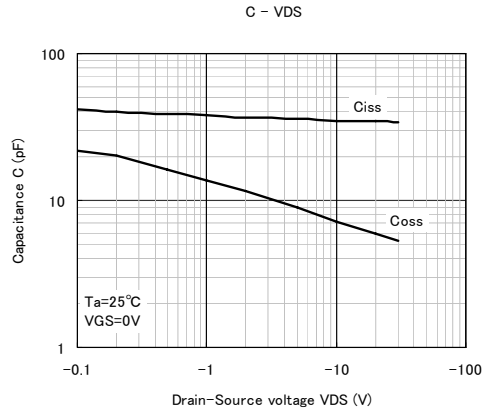
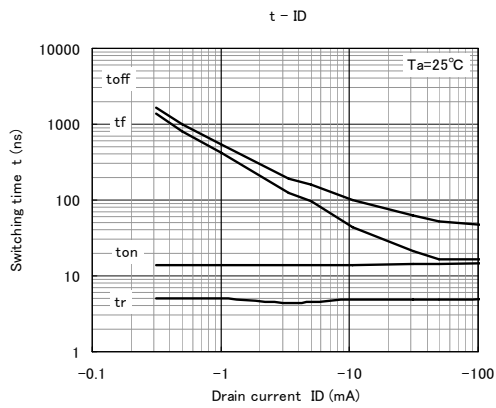
# RATING CHARACTERISTIC CURVES ( CHM3U22GESGP )

## P-MOSFET Typical Electrical Characteristics

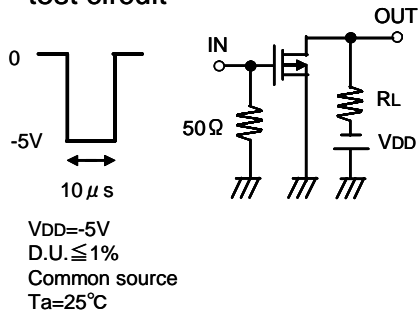


# RATING CHARACTERISTIC CURVES ( CHM3U22GESGP )

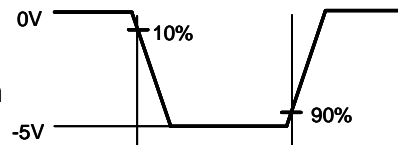
## P-MOSFET Typical Electrical Characteristics



### test circuit



### input waveform



### output waveform

