# CHENMKO ENTERPRISE CO.,LTD

**CHM4435AZPT**

## SURFACE MOUNT

## P-Channel Enhancement Mode Field Effect Transistor

*VOLTAGE 30 Volts CURRENT 8.8 Ampere*

Lead free devices

### APPLICATION

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

### FEATURE

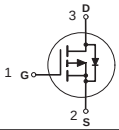
* Small flat package. ( SC-73/SOT-223 )
* High density cell design for extremely low $R_{DS(ON)}$.
* Rugged and reliable.

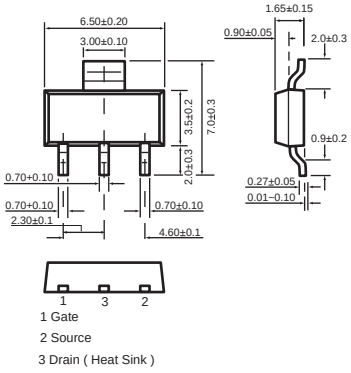
### CONSTRUCTION

* P-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 | CHM4435AZPT | Units |
|---|---|---|---|
| $V_{DSS}$ | Drain-Source Voltage | -30 | V |
| $V_{GSS}$ | Gate-Source Voltage | ±20 | V |
| $I_D$ | Maximum Drain Current - Continuous | -8.8 | A |
| | - Pulsed (Note 3) | -35 | |
| $P_D$ | 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 |

2005-02

# RATING CHARACTERISTIC CURVES ( CHM4435AZPT )

## 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 | -30 | | | V |
| $I_{DSS}$ | Zero Gate Voltage Drain Current | $V_{DS}$ = -24 V, $V_{GS}$ = 0 V | | | -1 | 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 | -1 | | -3 | V |
| $R_{DS(ON)}$ | Static Drain-Source On-Resistance | $V_{GS}$=-10V, $I_D$=-8.8A | | 20 | 24 | mΩ |
| | | $V_{GS}$=-4.5V, $I_D$=-5.0A | | 27 | 35 | |
| $g_{FS}$ | Forward Transconductance | $V_{DS}$ = -15V, $I_D$ = -8.8A | | 12 | | S |
| **SWITCHING CHARACTERISTICS** (Note 4) | | | | | | |
| $Q_g$ | Total Gate Charge | $V_{DS}$=-15V, $I_D$=-4.6A, $V_{GS}$=-5V | | 22 | 28 | nC |
| $Q_{gs}$ | Gate-Source Charge | | | 7 | | |
| $Q_{gd}$ | Gate-Drain Charge | | | 8 | | |
| $t_{on}$ | Turn-On Time | $V_{DD}$= -15V, $I_D$= -1.0A, $V_{GS}$= -10 V, $R_{GEN}$= 6 Ω | | 12 | 24 | nS |
| $t_r$ | Rise Time | | | 6 | 18 | |
| $t_{off}$ | Turn-Off Time | | | 110 | 140 | |
| $t_f$ | Fall Time | | | 35 | 70 | |
| **DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS** | | | | | | |
| $I_S$ | Drain-Source Diode Forward Current | (Note 1) | | | -2.1 | A |
| $V_{SD}$ | Drain-Source Diode Forward Voltage | $I_S$ = -2.1A, $V_{GS}$ = 0 V (Note 2) | | | -1.2 | V |