CHENMKO ENTERPRISE CO.,LTD

CHM4435AJPT

SURFACE MOUNT
P-Channel Enhancement Mode Field Effect Transistor
VOLTAGE 30 Volts   CURRENT 8 Ampere

Lead free devices

APPLICATION

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

FEATURE
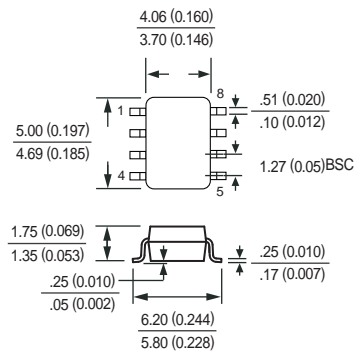
* Small flat package. (SO-8)
* High density cell design for extremely low $R_{DS(ON)}$.
* Rugged and reliable.
* High saturation current capability.
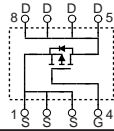
CONSTRUCTION

* P-Channel Enhancement

SO-8

Dimensions in millimeters   **SO-8**

4.06 (0.160) / 3.70 (0.146)
5.00 (0.197) / 4.69 (0.185)
.51 (0.020) / .10 (0.012)
1.27 (0.05)BSC
1.75 (0.069) / 1.35 (0.053)
.25 (0.010) / .05 (0.002)
.25 (0.010) / .17 (0.007)
6.20 (0.244) / 5.80 (0.228)

CIRCUIT

Absolute Maximum Ratings T_A = 25°C unless otherwise noted

Symbol	Parameter	CHM4435AJPT	Units
V_{DSS}	Drain-Source Voltage	-30	V
V_{GSS}	Gate-Source Voltage	±20	V
I_D	Maximum Drain Current - Continuous	-8	A
	- Pulsed (Note 3)	-50	
P_D	Maximum Power Dissipation	2500	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)	50	°C/W

2005-02

RATING CHARACTERISTIC CURVES (CHM4435AJPT)

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	$V_{DS} = -30$ 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	$V_{GS}=-10V$, $I_D=-8A$		17	20	mΩ
		$V_{GS}=-4.5V$, $I_D=-5A$		27	35	
g_{FS}	Forward Transconductance	$V_{DS} = -15V$, $I_D = -8A$		13		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 $R_{GEN}= 6\Omega$		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

RATING CHARACTERISTIC CURVES (CHM4435AJPT)

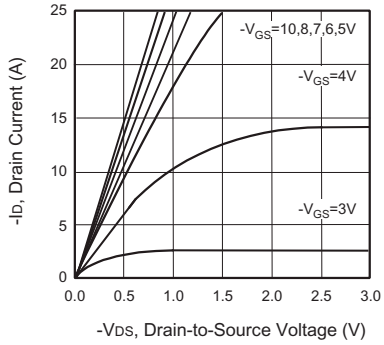**Typical Electrical Characteristics**
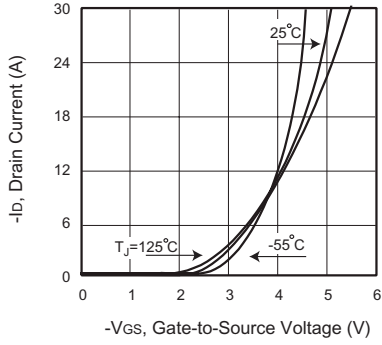

Figure 1. Output Characteristics

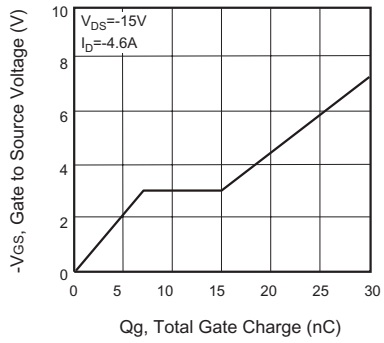**Figure 2. Transfer Characteristics**

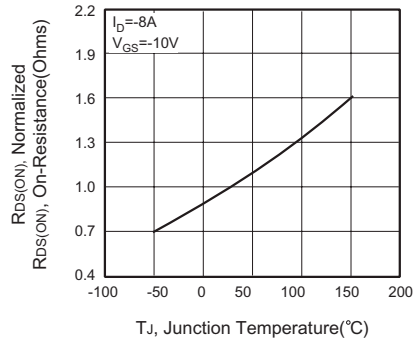**Figure 3. Gate Charge**

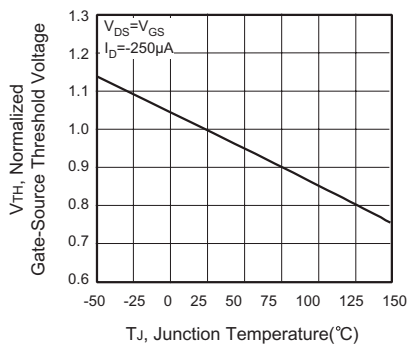**Figure 4. On-Resistance Variation
with Temperature**

**Figure 5. Gate Threshold Variation
with Temperature**