CHENMKO ENTERPRISE CO.,LTD

CHT2301PT

SURFACE MOUNT

P-Channel Enhancement Mode Field Effect Transistor

VOLTAGE 20 Volts CURRENT 2.3 Ampere

Lead free devices

APPLICATION

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

FEATURE

* Small surface mounting type. (SC-59/SOT-346)
* High density cell design for low $R_{DS(ON)}$.
* Suitable for high packing density.
* Rugged and reliable.
* High saturation current capability.
* Voltage controlled small signal switch.

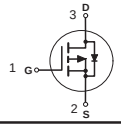
CONSTRUCTION

* P-Channel Enhancement

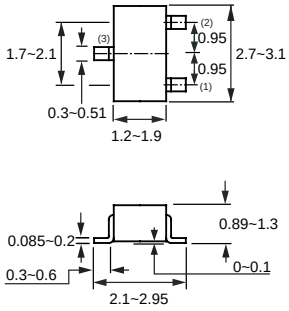
MARKING

* 01

CIRCUIT



SC-59/SOT-346



Dimensions in millimeters

SC-59/SOT-346

Absolute Maximum Ratings

T_A = 25°C unless otherwise noted

Symbol	Parameter	CHT2301PT	Units
V_{DSS}	Drain-Source Voltage	-20	V
V_{GSS}	Gate-Source Voltage	±8	V
I_D	Maximum Drain Current - Continuous (Note 1)	-2.3	A
	- Pulsed (Note 2)	-10	
I_S	Drain-Source Diose Forward Current (Note 1)	-1.6	A
P_D	Maximum Power Dissipation (Note 1)	1250	mW
T_J,T_{STG}	Operating and 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%

Thermal characteristics

$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	85	°C/W

2005-12

RATING CHARACTERISTIC CURVES (CHT2301PT)

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	-20			V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = -16 V, V_{GS} = 0 V			-1	µA
I_{GSS}	Gate-Body Leakage	V_{GS} = 8 V, V_{DS} = 0 V			+100	nA
I_{GSS}	Gate-Body Leakage	V_{GS} = -8 V, V_{DS} = 0 V			-100	nA
ON CHARACTERISTICS (Note 2)						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}, I_D = -250 µA	-0.6			V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=-4.5V, I_D=-2.8A			130	mΩ
		V_{GS}=-2.5V, I_D=-2.0A			190	
V_{SD}	Diose Forward Voltage	V_{DS} = 0V, I_S = -1.0 A			1.0	V
SWITCHING CHARACTERISTICS (Note 3)						
Q_g	Total Gate Charge	V_{DS}=-10V, I_D=-1A V_{GS}=-4.5V		4.32		nC
Q_{gs}	Gate-Source Charge			1.06		
Q_{gd}	Gate-Drain Charge			0.84		
t_{on}	Turn-On Time	V_{DD}= -10V I_D= -1.0A, V_{GEN}= -4.5 V R_L= 10Ω , R_{GEN}= 10Ω		13		nS
t_r	Rise Time			36		
t_{off}	Turn-Off Time			42		
t_f	Fall Time			34		

Note : 3. Guaranteed by design , not subject to production trsting

RATING CHARACTERISTIC CURVES (CHT2301PT)

Typical Electrical Characteristics

Figure 1. Output Characteristics

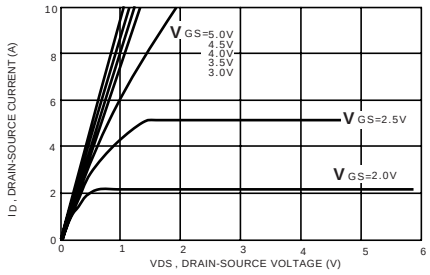


Figure 2. Transfer Characteristics

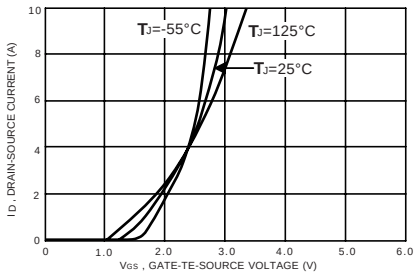


Figure 3. Breakdown Voltage Variation with Temperature

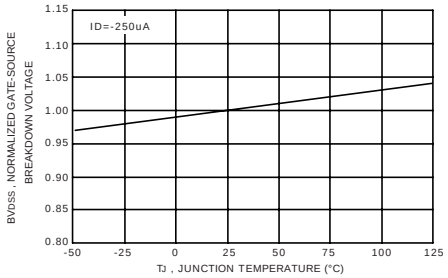


Figure 4. On-Resistance Variation with Temperature

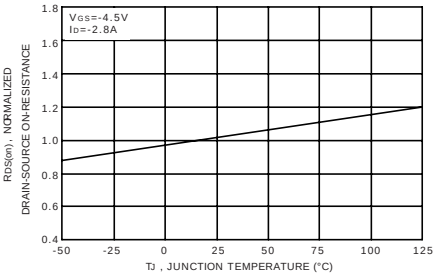


Figure 5. Gate Threshold Variation with Temperature

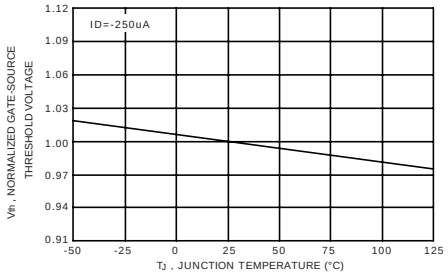


Figure 6. Gate Charge