CHENMKO ENTERPRISE CO.,LTD

Halogens free devices

CHT100GP

SURFACE MOUNT

N-Channel Enhancement Mode Field Effect Transistor

VOLTAGE 30 Volts CURRENT 1.1 Ampere

APPLICATION

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

FEATURE

* Small surface mounting type. (SOT-23)
* 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.

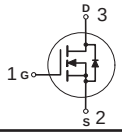
CONSTRUCTION

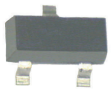
* N-Channel Enhancement

MARKING

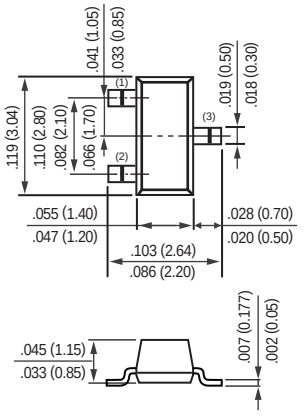
* T100

CIRCUIT





SOT-23



Dimensions in inches and (millimeters)

SOT-23

Absolute Maximum Ratings

T_A = 25°C unless otherwise noted

Symbol	Parameter	CHT100GP	Units
V_{DSS}	Drain-Source Voltage	30	V
V_{GSS}	Gate-Source Voltage - Continuous	±20	V
I_D	Maximum Drain Current - Continuous	±1.1	A
	- Pulsed	±4.4	A
P_D	Maximum Power Dissipation	500	mW
T_J,T_{STG}	Operating and Storage Temperature Range	-55 to 150	°C

Thermal characteristics

$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	250	K/W

RATING CHARACTERISTIC CURVES (CHT100GP)

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
		T_C=125°C			10	µA
I_{GSSF}	Gate - Body Leakage, Forward	V_{GS} = 12 V, V_{DS} = 0 V			100	nA
I_{GSSR}	Gate - Body Leakage, Reverse	V_{GS} = -12 V, V_{DS} = 0 V			-100	nA
ON CHARACTERISTICS (Note 1)						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = 10V, I_D = 1.0 µA	1		3.0	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS} = 4.5 V, I_D = 0.5 A			0.17	Ω
		V_{GS} = 10 V, I_D = 1.0 A			0.24	
g_{FS}	Forward Transconductance	V_{DS} = 10 V, I_D = 500 mA	1.3	2.4		S
DYNAMIC CHARACTERISTICS						
Q_g	Total Gate Charge	V_{DS} = 24 V, V_{GS} = 10 V, I_D = 1.0 A		5.5		nC
Q_{gs}	Gate-Source Charge			0.8		
Q_{gd}	Gate-Drain Charge			1.3		
C_{iss}	Input Capacitance	V_{DS} = 10 V, V_{GS} = 0 V, f = 1.0 MHz		150		pF
C_{oss}	Output Capacitance			90		
C_{rss}	Reverse Transfer Capacitance			30		
t_{on}	Turn-On Time	V_{DD} = 10 V, I_D = 500 mA, V_{GS} = 5.0 V, R_{GEN} = 50 Ω		10		nS
t_r				15		
t_{off}	Turn-Off Time	V_{DD} = 10 V, I_D = 500 mA, V_{GS} = 5.0 V, R_{GEN} = 50 Ω		25		nS
t_f				45		
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
I_S	Maximum Continuous Drain-Source Diode Forward Current				540	mA
I_{SM}	Maximum Pulsed Drain-Source Diode Forward Current				4.0	A
V_{SD}	Drain-Source Diode Forward Voltage	V_{GS} = 0 V, I_F = 1.0 A			1.2	V

RATING CHARACTERISTIC CURVES (CHT100GP)

Typical Electrical Characteristics

Figure 1. On-Region Characteristics

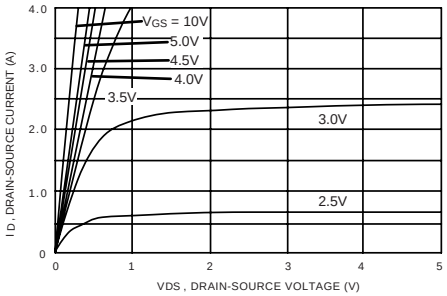


Figure 2. On-Resistance Variation with Temperature