

Halogens free devices



CHENMKO ENTERPRISE CO.,LTD

SURFACE MOUNT

N-Channel Enhancement Mode Field Effect Transistor

VOLTAGE 60 Volts CURRENT 0.5 Ampere

CHT170GP

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

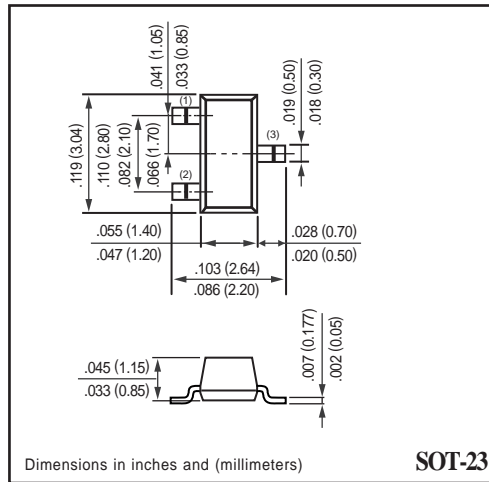
- * N-Channel Enhancement

MARKING

- * AT

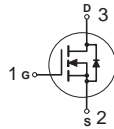


SOT-23



SOT-23

CIRCUIT



Absolute Maximum Ratings T_A = 25°C unless otherwise noted

Symbol	Parameter	CHT170GP	Units
V _{DSS}	Drain-Source Voltage	60	V
V _{DGR}	Drain-Gate Voltage	60	V
V _{GSS}	Gate-Source Voltage - Continuous - Non Repetitive (tp < 50µs)	±20	V
		±40	
I _D	Maximum Drain Current - Continuous - Pulsed	500	mA
		800	
P _D	Maximum Power Dissipation	300	mW
T _J , T _{STG}	Operating and Storage Temperature Range	-55 to 150	°C

Thermal characteristics

R _{θJA}	Thermal Resistance, Junction-to-Ambient	417	K/W
------------------	---	-----	-----

RATING CHARACTERISTIC CURVES (CHT170GP)

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

Symbol	Parameter	Conditions	Min	Typ	Max	Units
--------	-----------	------------	-----	-----	-----	-------

OFF CHARACTERISTICS

BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS} = 0\text{ V}, I_D = 100\ \mu\text{A}$	60	70		V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 60\text{ V}, V_{GS} = 0\text{ V}$			1	μA
I_{GSS}	Gate-Body Leakage	$V_{GS} = 15\text{ V}, V_{DS} = 0\text{ V}$			+10	μA
I_{GSS}	Gate-Body Leakage	$V_{GS} = 15\text{ V}, V_{DS} = 0\text{ V}$			-10	μA

ON CHARACTERISTICS (Note 1)

$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = -250\ \mu\text{A}$	0.8	2.1	3.0	V
$R_{DS(on)}$	Static Drain-Source On-Resistance	$V_{GS} = 10\text{ V}, I_D = 200\text{ mA}$			5	Ω
g_{FS}	Forward Transconductance	$V_{DS} = 10\ V_{DS(on)}, I_D = 200\text{ mA}$	80			mS

DYNAMIC CHARACTERISTICS

C_{iss}	Input Capacitance	$V_{DS} = 25\text{ V}, V_{GS} = 0\text{ V},$ $f = 1.0\text{ MHz}$		22	40	pF
C_{oss}	Output Capacitance			11	30	
C_{rss}	Reverse Transfer Capacitance			2.0	5	
t_{on}	Turn-On Time	$V_{DD} = 25\text{ V}$ $I_D = 0.5\text{ A}, V_{GS} = -10\text{ V}, R_{GEN} = 50\ \Omega$			10	nS
t_{off}	Turn-Off Time				10	

RATING CHARACTERISTIC CURVES (CHT170GP)

Typical Electrical Characteristics

Figure 1. On-Region Characteristics

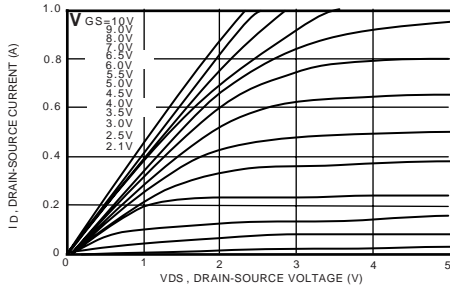


Figure 2. On-Resistance Variation with Gate Voltage and Drain Current

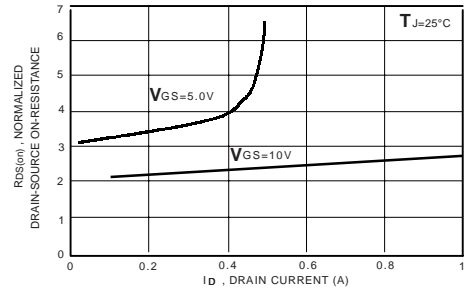


Figure 3. On-Resistance Variation with Temperature

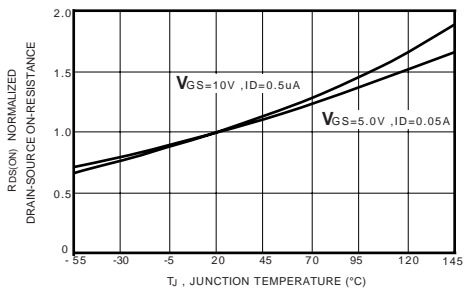


Figure 4. On-Resistance vs , Gate-Source Voltage

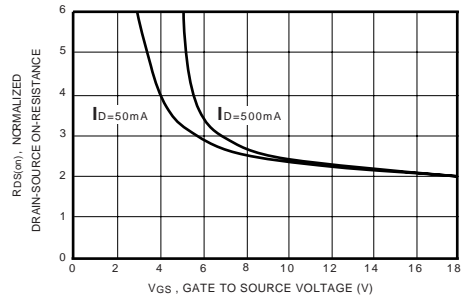


Figure 5. Max Poewr Disspation vs Ambient Temperature

