CHENMKO ENTERPRISE CO.,LTD

CHT170PT

SURFACE MOUNT
N-Channel Enhancement Mode Field Effect Transistor

VOLTAGE 60 Volts CURRENT 0.5 Ampere

Lead free devices

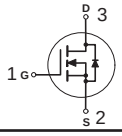
APPLICATION
* Servo motor control.
* Power MOSFET gate drivers.
* Other switching applications.

FEATURE
* Small surface mounting type. (SC-59)
* 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.

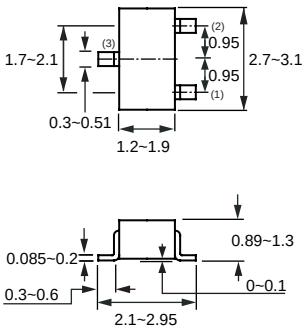
CONSTRUCTION
* N-Channel Enhancement

MARKING
* AT

CIRCUIT



SC-59/SOT-346



Dimensions in millimeters

SC-59/SOT-346

Absolute Maximum Ratings

T_A = 25°C unless otherwise noted

Symbol	Parameter	CHT170PT	Units
V_{DSS}	Drain-Source Voltage	60	V
V_{DGR}	Drain-Gate Voltage	60	V
V_{GSS}	Gate-Source Voltage - Continuous	±20	V
	- Non Repetitive (tp < 50µs)	±40	
I_D	Maximum Drain Current - Continuous	500	mA
	- Pulsed	800	
P_D	Maximum Power Dissipation	300	mW
T_J, T_{STG}	Operating and Storage Temperature Range	-55 to 150	°C

Thermal characteristics

$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	417	K/W

2004-4

RATING CHARACTERISTIC CURVES (CHT170PT)

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 = 100 µA	60	70		V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = 60 V, V_{GS} = 0 V			1	µA
I_{GSS}	Gate-Body Leakage	V_{GS} = 15 V, V_{DS} = 0 V			+10	µA
I_{GSS}	Gate-Body Leakage	V_{GS} = 15 V, V_{DS} = 0 V			-10	µA
ON CHARACTERISTICS (Note 1)						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}, I_D = -250 µA	0.8	2.1	3.0	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS} = 10 V, I_D= 200 m A			5	Ω
g_{FS}	Forward Transconductance	V_{DS} = 10 $V_{DS(on)}$, I_D = 200 m A	80			mS
DYNAMIC CHARACTERISTICS						
C_{iss}	Input Capacitance	V_{DS} = 25 V, V_{GS} = 0 V, f = 1.0 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} = 25V, I_D = 0.5A, V_{GS} = -10 V, R_{GEN} = 50 Ω			10	nS
t_{off}	Turn-Off Time				10	

RATING CHARACTERISTIC CURVES (CHT170PT)

Typical Electrical Characteristics

Figure 1. On-Region Characteristics

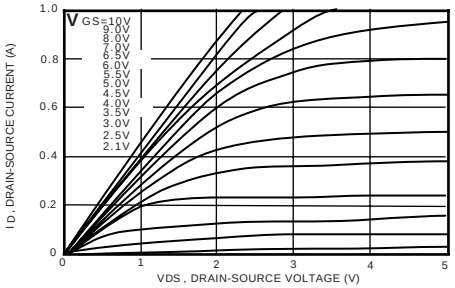


Figure 2. On-Resistance Variation with Gate Voltage and Drain Current

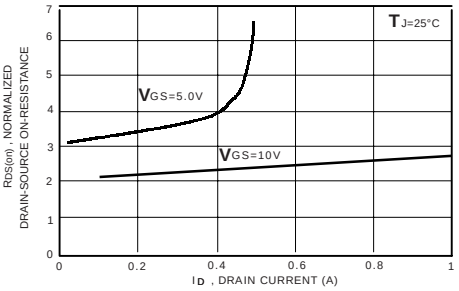


Figure 3. On-Resistance Variation with Temperature

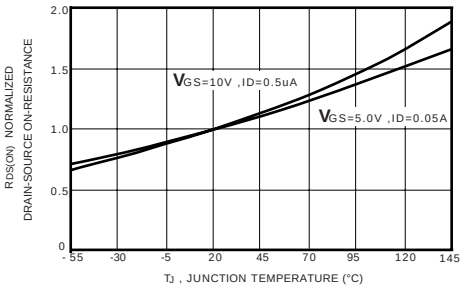


Figure 4. On-Resistance vs , Gate-Source Voltage

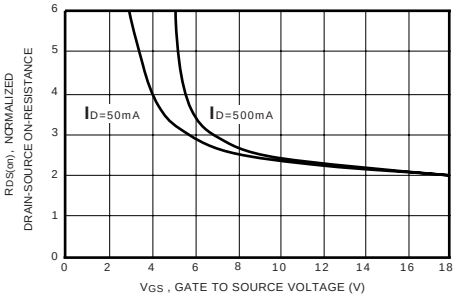


Figure 5. Max Poewr Disspation vs Ambient Temperature