



CHENMKO ENTERPRISE CO.,LTD

CHM6561QGP

SURFACE MOUNT

Dual N-Channel Enhancement MOS FET

VOLTAGE 30 Volts CURRENT 2.8 Ampere

Halogens free devices

APPLICATION

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

FEATURE

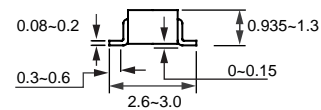
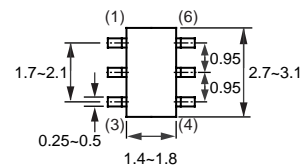
- * Small surface mounting type. (SC-74/SOT-457)
- * High density cell design for low $R_{DS(ON)}$.
- * Suitable for high packing density.
- * Rugged and reliable.
- * High saturation current capability.
- * Voltage controlled small signal switch.

CONSTRUCTION

- * Dual N-Channel Enhancement



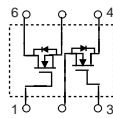
SC-74/SOT-457



Dimensions in millimeters

SC-74/SOT-457

CIRCUIT



Absolute Maximum Ratings $T_A = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	CHM6561QGP	Units
V_{DSS}	Drain-Source Voltage	30	V
V_{GSS}	Gate-Source Voltage - Continuous	± 20	V
I_D	Maximum Drain Current - Continuous - Pulsed	$T_A = 25^\circ\text{C}$	2.8
		$T_A = 70^\circ\text{C}$	2.3
P_D	Maximum Power Dissipation	$T_A = 25^\circ\text{C}$	1.15
		$T_A = 70^\circ\text{C}$	0.75
T_J, T_{STG}	Operating and Storage Temperature Range	-55 to 150	$^\circ\text{C}$

Thermal characteristics

$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	50	$^\circ\text{C/W}$
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RATING CHARACTERISTIC CURVES (CHM6561QGP)

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

Symbol	Parameter	Conditions	Min	Typ	Max	Units
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OFF CHARACTERISTICS

BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS} = 0\text{ V}, I_D = 250\ \mu\text{A}$	50			V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 30\text{ V}, V_{GS} = 1\text{ V}$			1	μA
		$V_{DS} = 30\text{ V}, V_{GS} = 0\text{ V}$			10	μA
I_{GSSF}	Gate - Body Leakage, Forward	$V_{GS} = 20\text{ V}, V_{DS} = 0\text{ V}$			100	nA
I_{GSSR}	Gate - Body Leakage, Reverse	$V_{GS} = -20\text{ V}, V_{DS} = 0\text{ V}$			-100	nA

ON CHARACTERISTICS (Note 1)

$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\ \mu\text{A}$	1		3	V
$R_{DS(on)}$	Static Drain-Source On-Resistance	$V_{GS} = 10\text{ V}, I_D = 2.8\text{ A}$		0.043	0.060	Ω
		$V_{GS} = 4.5\text{ V}, I_D = 2.1\text{ A}$		0.056	0.080	
$I_{D(on)}$	On-State Drain Current	$V_{GS} = 10\text{ V}, V_{DS} \geq 4.5\text{ V}$	6			A
		$V_{GS} = 4.5\text{ V}, V_{DS} \geq 4.5\text{ V}$	4			
g_{FS}	Forward Transconductance	$V_{DS} = 4.5\text{ V}, I_D = 2.5\text{ A}$		4.6		S

DYNAMIC CHARACTERISTICS

Q_g	Total Gate Charge	$V_{DS} = 15\text{ V}, V_{GS} = 10\text{ V},$ $I_D = 2.5\text{ A}$		4.5	10	nC
Q_{gs}	Gate-Source Charge			0.8		
Q_{gd}	Gate-Drain Charge			1.0		
C_{iss}	Input Capacitance	$V_{DS} = 15\text{ V}, V_{GS} = 0\text{ V},$ $f = 1.0\text{ MHz}$		240		pF
C_{oss}	Output Capacitance			110		
C_{rss}	Reverse Transfer Capacitance			17		
t_{on}	Turn-On Time	$V_{DD} = 15\text{ V},$ $I_D = 1\text{ A}, V_{GS} = 10\text{ V},$ $R_{GEN} = 6\ \Omega, R_L = 15\ \Omega$		8	20	nS
t_r				12	30	
t_{off}	Turn-Off Time	$V_{DD} = 15\text{ V},$ $I_D = 1\text{ A}, V_{GS} = 10\text{ V},$ $R_{GEN} = 6\ \Omega, R_L = 15\ \Omega$		17	35	nS
t_f				8	20	

DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS

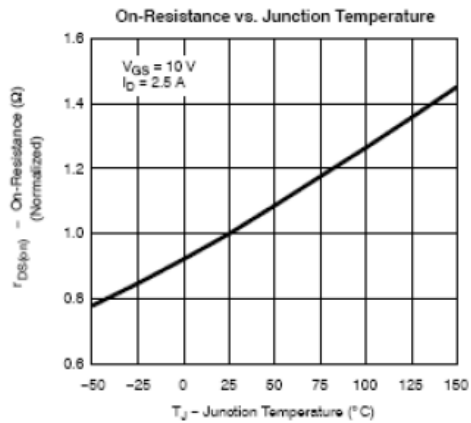
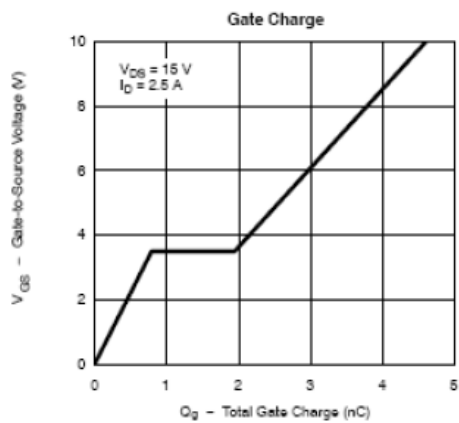
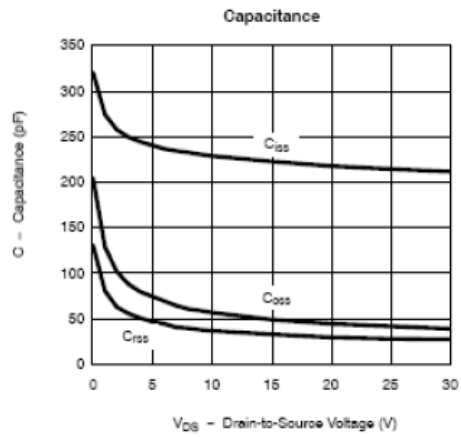
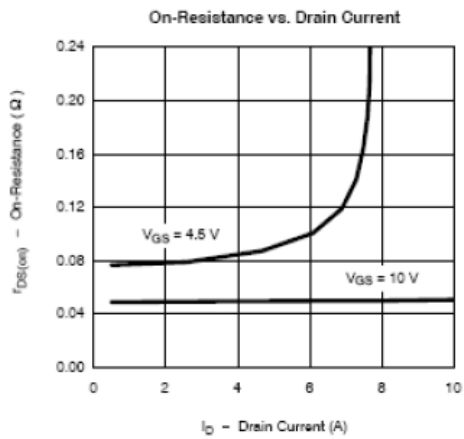
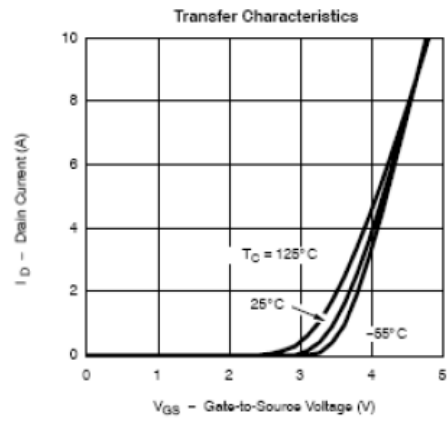
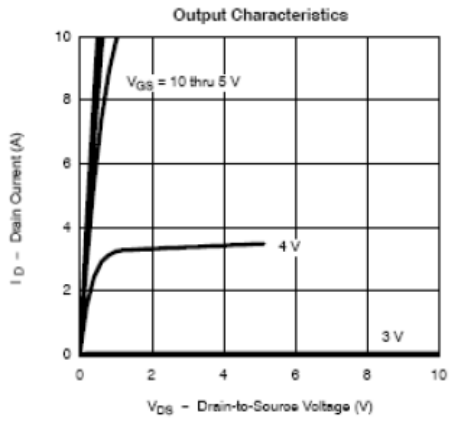
I_S	Maximum Continuous Drain-Source Diode Forward Current			1.25	A	
V_{SD}	Drain-Source Diode Forward Voltage	$V_{GS} = 0\text{ V}, I_S = 1.25\text{ A}$ (Note 1)		0.8	1.2	V

Note:

1. Pulse Test: Pulse Width < 300 μs , Duty Cycle < 2.0%.

RATING CHARACTERISTIC CURVES (CHM6561QGP)

Typical Electrical Characteristics



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