



CHENMKO ENTERPRISE CO.,LTD

Halogens free devices

N-Channel Enhancement Mode Field Effect Transistor

VOLTAGE 650 Volts CURRENT 4 Ampere

CHM05N65PAGP

APPLICATION

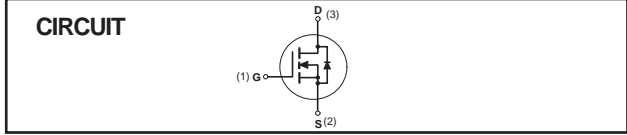
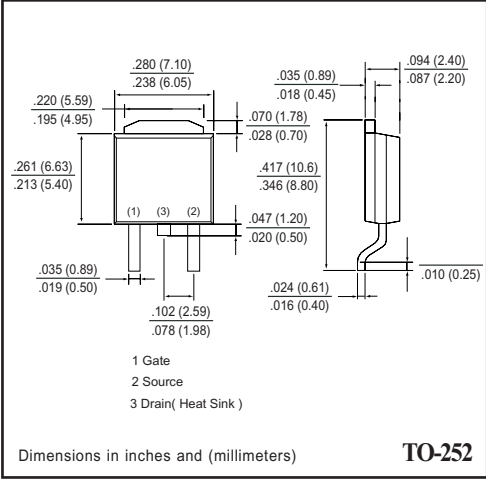
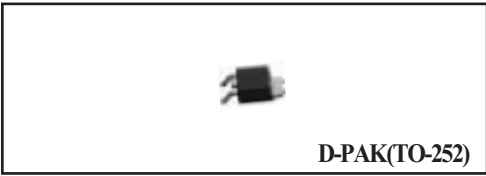
- * Power MOSFET gate drivers.
- * Other switching applications.

FEATURE

- * Small flat package. D-PAK(TO-252)
- * Super high dense cell design for extremely low R_{DS(ON)}.
- * High power and current handling capability.

CONSTRUCTION

- * N-Channel Enhancement



Absolute Maximum Ratings T_A = 25°C unless otherwise noted

Symbol	Parameter	CHM05N65PAGP	Units
V _{DSS}	Drain-Source Voltage	650	V
V _{GSS}	Gate-Source Voltage	±30	V
I _D	Maximum Drain Current - Continuous (Note 5)	4.0	A
	- Pulsed (Note 3)	16	
P _D	Maximum Power Dissipation	56	W
T _J	Operating Temperature Range	-55 to 150	°C
T _{STG}	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%
 3. Repetitive Rating , Pulse width limited by maximum junction temperature
 4. Guaranteed by design , not subject to production trsting
 5. IS(max) = 2.5A .

Thermal characteristics

R _{θJA}	Thermal Resistance, Junction-to-Ambient (Note 1)	50	°C/W
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ELECTRICAL CHARACTERISTIC (CHM05N65PAGP)

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	$V_{GS} = 0\text{ V}, I_D = 250\ \mu\text{A}$	650			V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 650\text{V}, V_{GS} = 0\text{ V}$			25	μA
I_{GSSF}	Gate-Body Leakage	$V_{GS} = 30\text{V}, V_{DS} = 0\text{ V}$			+100	nA
I_{GSSR}	Gate-Body Leakage	$V_{GS} = -30\text{V}, V_{DS} = 0\text{ V}$			-100	nA

ON CHARACTERISTICS (Note 2)

$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\ \mu\text{A}$	2.0		4.0	V
$R_{DS(on)}$	Static Drain-Source On-Resistance	$V_{GS} = 10\text{V}, I_D = 4\text{A}$		2	2.4	Ω
g_{FS}	Forward Transconductance	$V_{DS} = 40\text{V}, I_D = 2\text{A}$		19		S

Dynamic Characteristics

C_{iss}	Input Capacitance	$V_{DS} = 25\text{V}, V_{GS} = 0\text{V},$ $f = 1.0\text{ MHz}$		570		pF
C_{oss}	Output Capacitance			90		
C_{rss}	Reverse Transfer Capacitance			20		

SWITCHING CHARACTERISTICS (Note 4)

Q_g	Total Gate Charge	$V_{DS} = 480\text{V}, I_D = 4\text{A}$ $V_{GS} = 10\text{V}$		10	13.3	nC
Q_{gs}	Gate-Source Charge			2.3		
Q_{gd}	Gate-Drain Charge			4		
t_{on}	Turn-On Time	$V_{DD} = 300\text{V}$ $I_D = 4\text{A}, V_{GS} = 10\text{ V}$ $R_{GEN} = 25\ \Omega$		23	46	nS
t_r	Rise Time			12	26	
t_{off}	Turn-Off Time			35	6708	
t_f	Fall Time			13	26	

DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS

I_S	Drain-Source Diode Forward Current	(Note 1)			4.0	A
V_{SD}	Drain-Source Diode Forward Voltage	$I_S = 4\text{A}, V_{GS} = 0\text{ V}$			1.5	V

RATING CHARACTERISTIC CURVES (CHM05N65PAGP)

Typical Electrical Characteristics

Figure 1. Output Characteristics

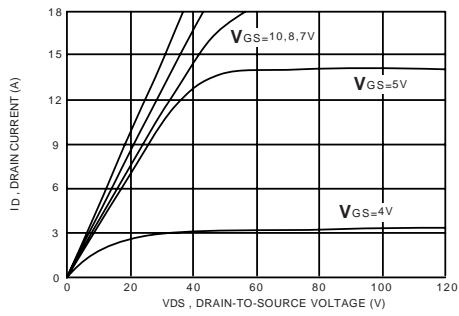


Figure 2. Transfer Characteristics

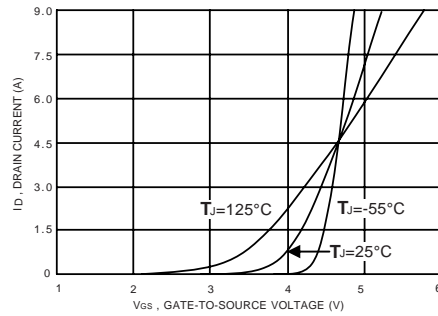


Figure 3. Gate Charge

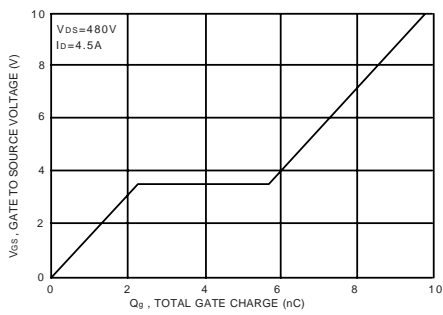


Figure 4. On-Resistance Variation with Temperature

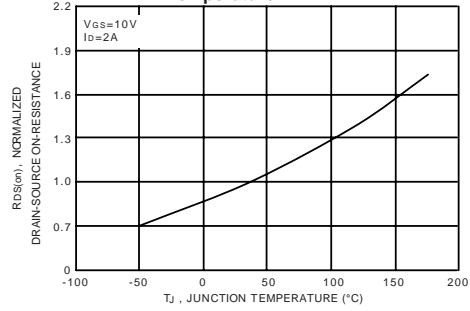


Figure 5. Gate Threshold Variation with Temperature

