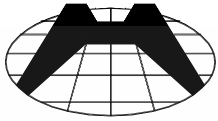
查询H01N60S供应商　　捷多邦，专业PCB打样工厂，24小时加急出货



HI-SINCERITY
MICROELECTRONICS CORP.

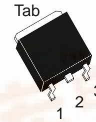
H01N60S Series

N-Channel Power Field Effect Transistor

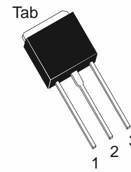
Description

This high voltage MOSFET uses an advanced termination scheme to provide enhanced voltage-blocking capability without degratding performance over time. In addition, this advanced MOSFET is designed to withstand high energy in avalanche and commutation modes. The new energy efficient design also offers a drain-to-source diode with a fast recovery time. Designed for high voltage, high speed switching applications in power supplies, converters and PWM motor controls, these devices are particularly well suited for bridge circuits where diode speed and commutating safe operating areas are critical and offer additional and saafety margin against unexpected voltage transients.

H01N60S Series Pin Assignment



3-Lead Plastic **TO-252**
Package Code: J
Pin 1: Gate
Pin 2 & Tab: Drain
Pin 3: Source



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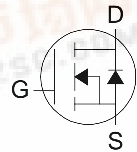
H01N60S Series Symbol:



Features

- 1A, 600V, $R_{DS(on)}$=12Ω@V_{GS}=10V
- Low Gate Charge 15nC(Typ.)
- Low C_{rss} 4pF(Typ.)
- Fast Switching
- Improved d_v/d_t Capability

Absolute Maximum Ratings

Symbol	Parameter	H01N60SI / H01N60SJ	Units
V_{DSS}	Drain-Source Voltage	600	V
I_D	Drain Current (Continuous T_C=25°C)	1	A
	Drain Current (Continuous T_C=100°C)	0.6	A
I_{DM}	Drain Current (Pulsed) [*1]	4	A
V_{GS}	Gate-Source Voltage	±30	V
E_{AS}	Single Pulse Avalanche Energy (L=59mH, I_{AS}=1.1A, V_{DD}=50V, R_G=25Ω, Starting T_J=25°C)	50	mJ
I_{AR}	Avalanche Current [*1]	1	A
E_{AR}	Repetitive Avalanche Energy	2.8	mJ
dv/dt	Peak Diode Recovery dv/dt [*2]	4.5	V/nS
V_{GS}	Gate-to-Source Voltage (Continue)	±20	V
P_D	Total Power Dissipation (T_A=25°C)	2.5	W
	Total Power Dissipation (T_C=25°C)	28	W
	Derate above 25°C	0.22	W/°C
T_j, T_{stg}	Operating and Storage Temperature Range	-55 to +150	°C
T_L	Maximum Lead Temperature for Soldering Purposes, 1/8" from case for 5 seconds	300	°C

*1: Repetitive Rating : Pulse width limited by maximum junction temperature
*2: I_{SD}≤1.1A, di/dt≤200A/us, V_{DD}≤BV_{DSS}, Starting TJ=25°C

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Thermal Characteristics

Symbol	Parameter	Value	Units
$R_{\theta JC}$	Thermal Resistance Junction to Case Max.	4.5	°C/W
$R_{\theta JA}$	Thermal Resistance Junction to Ambient Max.	110	°C/W

ELectrical Characteristics (T_J=25°C, unless otherwise specified)

Symbol	Characteristic		Min.	Typ.	Max.	Unit
• Off Characteristics						
V_{DSS}	Drain-Source Breakdown Voltage (V_{GS}=0V, I_D=250uA)		600	-	-	V
$\Delta BV_{DSS}/\Delta T_J$	Breakdown Voltage Temperature Coefficient (I_D=250uA, Referenced to 25°C)		-	0.6	-	V/°C
I_{DSS}	Zero Gate Voltage Drain Current (V_{DS}=600V, V_{GS}=0V)		-	-	1	uA
	Zero Gate Voltage Drain Current (V_{DS}=480V, T_j=125°C)		-	-	50	uA
I_{GSSF}	Gate-Body Leakage Current-Forward (V_{GS}=30V, V_{DS}=0V)		-	-	100	nA
I_{GSSR}	Gate-Body Leakage Current-Reverse (V_{GS}=-30V, V_{DS}=0V)		-	-	-100	nA
• On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage (V_{DS}=V_{GS}, I_D=250uA)		2	-	4	V
$R_{DS(on)}$	Static Drain-Source On-Resistance (V_{GS}=10V, I_D=0.6A) *3		-	-	12	Ω
g_{FS}	Forward Transconductance (V_{DS}=40V, I_D=0.5A) *3		-	0.75	-	S
• Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{GS}=0V, V_{DS}=25V, f=1MHz	-	210	250	pF
C_{oss}	Output Capacitance		-	19	25	
C_{rss}	Reverse Transfer Capacitance		-	4	8	
• Switching Characteristics						
$t_{d(on)}$	Turn-on Delay Time	V_{DD}=300V, I_D=1.1A R_G=25Ω *3	-	-	30	ns
t_r	Turn-on Rise Time		-	-	60	
$t_{d(off)}$	Turn-off Delay Time		-	-	45	
t_f	Turn-off Fall Time		-	-	75	
Q_g	Total Gate Charge	V_{DS}=480V, I_D=1.1A V_{GS}=10V *3	-	15	20	nC
Q_{gs}	Gate-Source Charge		-	4	-	
Q_{gd}	Gate-Drain Charge		-	3	-	
• Drain-Source Diode Characteristics and Maximum Ratings						
I_S	Maximum Continuous Drain-Source Diode Forward Current		-	-	1	A
I_{SM}	Maximum Pulsed Drain-Source Diode Forward Current		-	-	4	A
V_{SD}	Drain-Source Diode Forward Voltage (V_{GS}=0V, I_S=1A)		-	-	1.4	V
t_{rr}	Reverse Recovery Time (V_{GS}=0V, I_S=1.1A, dI_F/dt=100A/us) *3		-	190	-	ns
Qrr	Reverse Recovery Charge (V_{GS}=0V, I_S=1.1A, dI_F/dt=100A/us) *3		-	0.53	-	nC

*3: Pulse Test: Pulse Width ≤300us, Duty Cycle≤2%

TO-252 Dimension

3-Lead TO-252 Plastic
Surface Mount Package
HSMC Package Code: J

Marking:

Pb Free Mark
Pb-Free: "•" (Note)
Normal: None

H J
0 1 N 6 0 S

Date Code
Control Code

Note: Green label is used for pb-free packing

Pin Style: 1.Gate 2.Drain 3.Source

Material:
- Lead solder plating: Sn60/Pb40 (Normal), Sn/3.0Ag/0.5Cu or Pure-Tin (Pb-free)
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

DIM	Min.	Max.
A	6.35	6.80
C	4.80	5.50
F	1.30	1.70
G	5.40	6.25
H	2.20	3.00
L	0.40	0.90
M	2.20	2.40
N	0.90	1.50
a1	0.40	0.65
a2	-	*2.30
a5	0.65	1.05

*: Typical, Unit: mm

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DIM	Min.	Max.
A	6.40	6.80
B	-	6.00
C	5.04	5.64
D	-	*4.34
E	0.40	0.80
F	0.50	0.90
G	5.90	6.30
H	2.50	2.90
I	9.20	9.80
J	0.60	1.00
K	-	0.96
L	0.66	0.86
M	2.20	2.40
N	0.70	1.10
O	0.82	1.22
a1	0.40	0.60
a2	2.10	2.50
y1	-	5°
y2	-	3°

*: Typical, Unit: mm

TO-251 Dimension

Marking:

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Pb-Free: "•" (Note)
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DIM	Min.	Max.
A	6.35	6.80
C	4.80	5.50
F	1.30	1.70
G	5.40	6.25
H1	6.75	8.00
K	0.50	0.90
K1	0.40	0.90
L	0.90	1.50
M	2.20	2.40
a1	0.40	0.65
a2	-	*2.30

*: Typical, Unit: mm

3-Lead TO-251
Plastic Package
HSMC Package Code: I

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Pb-Free: "•" (Note)
Normal: None

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E	0.40	0.80
F	0.50	0.90
G	5.90	6.30
H	-	*1.80
H1	-	*9.30
I	-	*16.10
J	-	*0.80
K	-	0.96
K1	-	*0.76
M	2.20	2.40
a1	0.40	0.60
a2	2.10	2.50
y1	-	5°
y2	-	3°

*: Typical, Unit: mm

3-Lead TO-251
Plastic Package
HSMC Package Code: I

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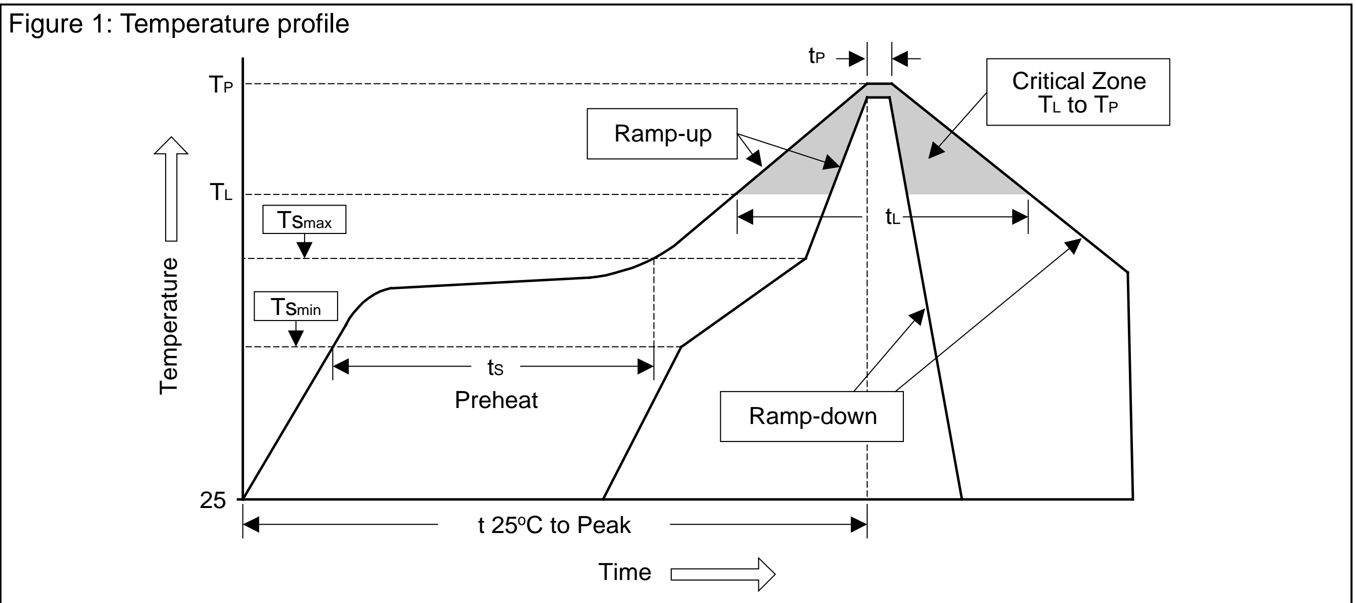
  Tel: 886-3-5983621~5 Fax: 886-3-5982931

Soldering Methods for HSMC's Products

1. Storage environment: Temperature=10ºC~35ºC Humidity=65%±15%

2. Reflow soldering of surface-mount devices

Figure 1: Temperature profile



Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	<3ºC/sec	<3ºC/sec
Preheat - Temperature Min (Ts_{min}) - Temperature Max (Ts_{max}) - Time (min to max) (ts)	 100ºC 150ºC 60~120 sec	 150ºC 200ºC 60~180 sec
Tsmax to T_L - Ramp-up Rate	 <3ºC/sec	 <3ºC/sec
Time maintained above: - Temperature (T_L) - Time (t_L)	 183ºC 60~150 sec	 217ºC 60~150 sec
Peak Temperature (T_P)	240ºC +0/-5ºC	260ºC +0/-5ºC
Time within 5ºC of actual Peak Temperature (t_P)	10~30 sec	20~40 sec
Ramp-down Rate	<6ºC/sec	<6ºC/sec
Time 25ºC to Peak Temperature	<6 minutes	<8 minutes

3. Flow (wave) soldering (solder dipping)

Products	Peak temperature	Dipping time
Pb devices.	245ºC ±5ºC	5sec ±1sec
Pb-Free devices.	260ºC +0/-5ºC	5sec ±1sec