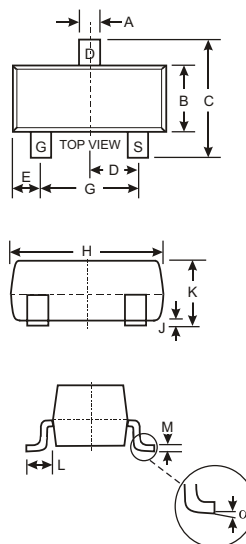


Features

- High density cell design for Low $R_{DS(on)}$.
- Voltage controlled small signal switch.
- Rugged and reliable.
- High saturation current capability.
- ESD protected.
- Marking Code:72K



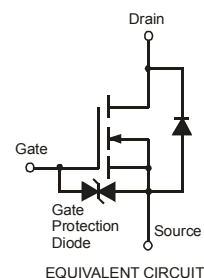
SOT-23		
Dim	Min	Max
A	0.37	0.51
B	1.20	1.40
C	2.30	2.50
D	0.89	1.03
E	0.45	0.60
G	1.78	2.05
H	2.80	3.00
J	0.013	0.10
K	0.903	1.10
L	0.45	0.61
M	0.085	0.180
α	0°	8°
All Dimensions in mm		

Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Limit	Unit
Drain-source Voltage	V_{DS}	60	V
Gate-source Voltage	V_{GS}	± 20	V
Drain Current	I_D	300	mA
Pulsed Drain Current ^A	I_{DM}	1.5	A
Total Power Dissipation @ $T_A=25^\circ\text{C}$	P_D	350	mW
Thermal Resistance Junction-to-Ambient @ Steady State ^B	$R_{\theta JA}$	357	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature Range	T_J, T_{STG}	-55~+150	$^\circ\text{C}$

A. Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty cycle $\leq 2\%$.

B. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.



N-CHANNEL ENHANCEMENT MODE FIELD EFFECT TRANSISTOR

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

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BVDSS	VGS= 0V, ID=250μA	60			V
Zero Gate Voltage Drain Current	IDSS	VDS=60V,VGS=0V			1	μA
Gate-Body Leakage Current	IGSS	VGS= ±20V, VDS=0V			±10	μA
Gate Threshold Voltage	VGS(th)	VDS= VGS, ID=250μA	0.8	1.5	3.0	V
Static Drain-Source On-Resistance	RDS(ON)	VGS= 10V, ID=450mA		2.0	3.5	Ω
		VGS= 4.5V, ID=200mA		2.8	4.5	
Diode Forward Voltage	VSD	IS=450mA,VGS=0V			1.2	V
Maximum Body-Diode Continuous Current	IS				300	mA
Dynamic Parameters						
Input Capacitance	Ciss	VDS=60V,VGS=0V ,f=1MHZ		18		pF
Output Capacitance	Coss			12		
Reverse Transfer Capacitance	Crss			7		
Switching Parameters						
Total Gate Charge	Qg	VGS=10V,VDS=60V, ID=0.3A		1.7	2.4	nC
Turn-on Delay Time	tD(on)	VGS=10V,VDD=30V, ID=300mA, RGEN=6Ω		5		ns
Turn-off Delay Time	tD(off)			17		
Reverse recovery Time	trr	VGS=0V,IS=300mA, VR=25V, dIS/dt=- 100A/μs		30		ns

TYPICAL TRANSIENT CHARACTERISTICS

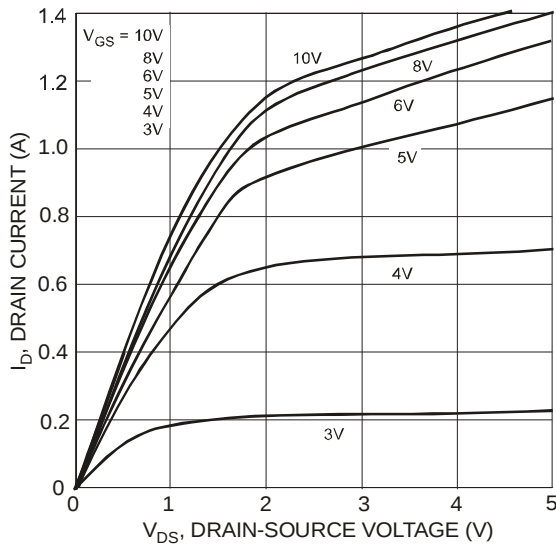


Fig. 1 Typical Output Characteristics

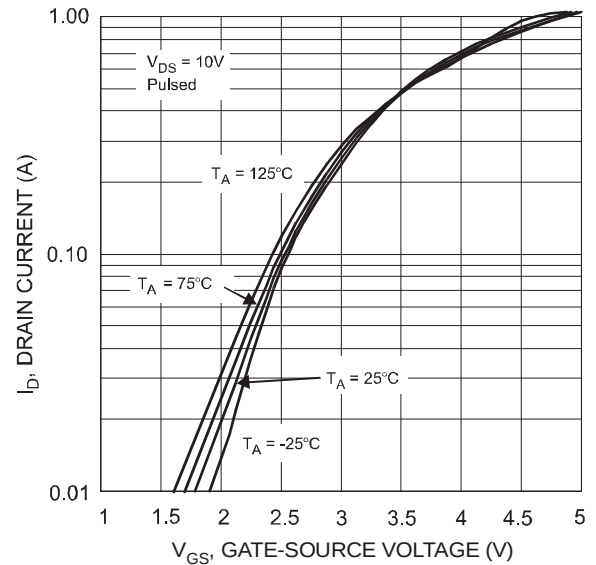


Fig. 2 Typical Transfer Characteristics

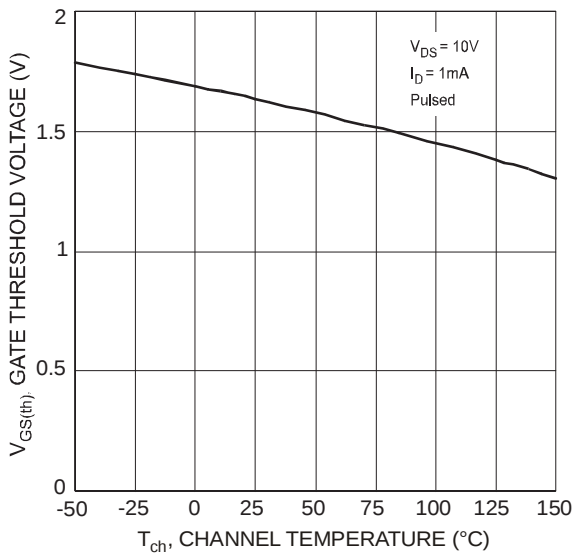


Fig. 3 Gate Threshold Voltage vs. Channel Temperature

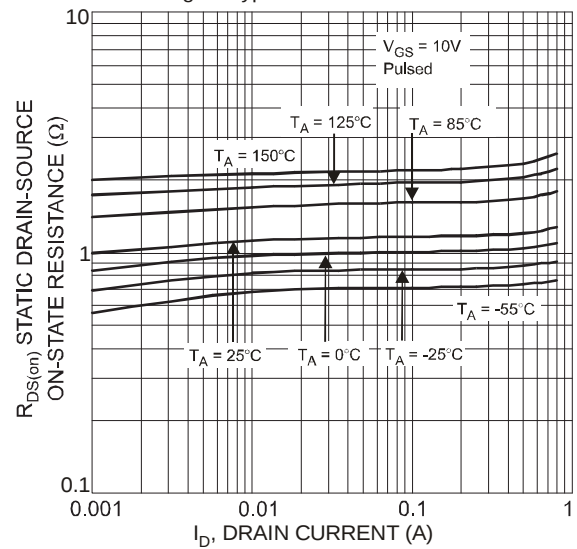


Fig. 4 Static Drain-Source On-Resistance vs. Drain Current

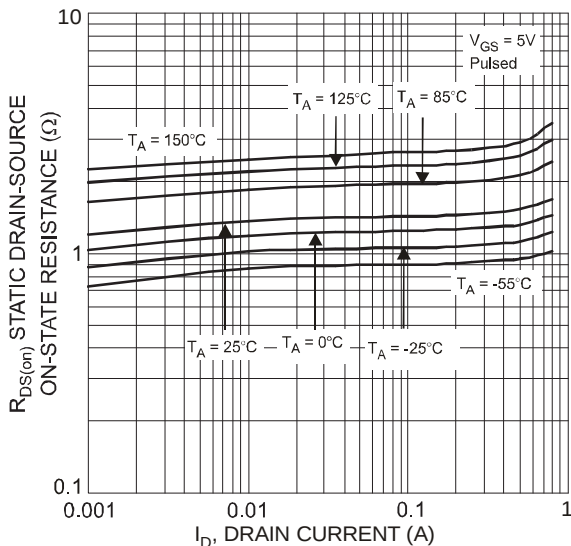


Fig. 5 Static Drain-Source On-Resistance vs. Drain Current

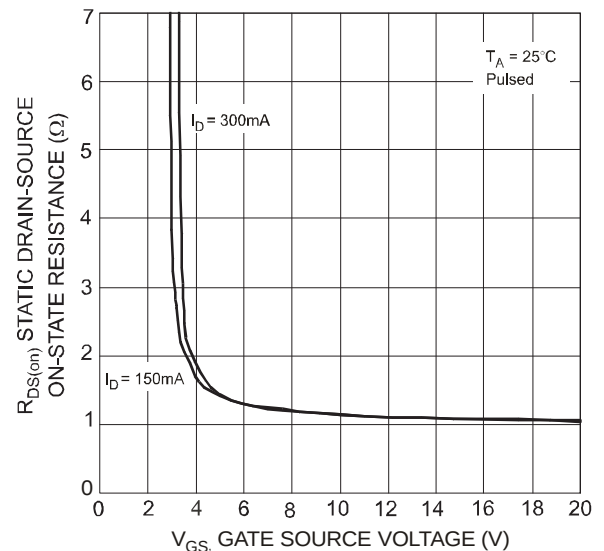


Fig. 6 Static Drain-Source On-Resistance vs. Gate-Source Voltage

IMPORTANT NOTICE

HC-SEMI reserves the right to make changes without further notice to any products herein.

HC-SEMI makes no warranty, representation or guarantee regarding

The suitability of its products for any particular purpose, nor does HC-SEMI assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation consequential or incidental damages.

“Typical” parameters can and do vary in different applications. All operating parameters, including “Typicals” must be validated for each customer application by customer’s technical experts.

HC-SEMI products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the HC-SEMI product could create a situation where personal injury or death may occur.

Should Buyer purchase or use HC-SEMI products for any such unintended or unauthorized application, Buyer shall indemnify and hold HC-SEMI and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that HC-SEMI was negligent regarding the design or manufacture of the part.