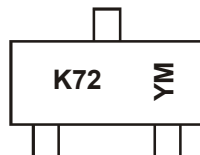


Marking Information



K72 = Product Type Marking Code
 YM = Date Code Marking
 Y or \bar{Y} = Year (ex: I = 2021)
 M or \bar{M} = Month (ex: 9 = September)

Date Code Key

Year	2002	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Code	N	I	J	K	L	M	N	O	P	R	S

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic			Symbol	Value	Unit
Drain-Source Voltage			V _{DSS}	60	V
Drain-Gate Voltage R _{GS} ≤ 1.0MΩ			V _{DGR}	60	V
Gate-Source Voltage			V _{GSS}	±20	V
				±40	
Continuous Drain Current (Note 5) V _{GS} = 10V	Steady State	T _A = +25°C	I _D	170	mA
		T _A = +85°C		120	
		T _A = +100°C		105	
Continuous Drain Current (Note 6) V _{GS} = 10V	Steady State	T _A = +25°C	I _D	210	mA
		T _A = +85°C		150	
		T _A = +100°C		135	
Maximum Continuous Body Diode Forward Current (Note 6)			I _S	0.2	A
				0.5	
Pulsed Drain Current (10μs Pulse, Duty Cycle = 1%)			I _{DM}	800	mA

Thermal Characteristics (@ T_A = +25°C, unless otherwise specified.)

Characteristic		Symbol	Value	Unit
Total Power Dissipation	(Note 5)	P _D	370	mW
	(Note 6)		540	
Thermal Resistance, Junction to Ambient	(Note 5)	R _{θJA}	348	°C/W
	(Note 6)		241	
Thermal Resistance, Junction to Case	(Note 6)	R _{θJC}	91	
Operating and Storage Temperature Range		T _J , T _{STG}	-55 to +150	°C

Notes: 5. Device mounted on FR-4 PCB, with minimum recommended pad layout.
 6. Device mounted on 1" x 1" FR-4 PCB with high coverage 2oz. Copper, single sided.
 7. Short duration pulse test used to minimize self-heating effect.
 8. Guaranteed by design. Not subject to product testing.

Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 7)						
Drain-Source Breakdown Voltage	BV_{DSS}	60	70	—	V	$V_{GS} = 0V, I_D = 10\mu A$
Zero Gate Voltage Drain Current	I_{DSS}	—	—	1.0 500	μA	$V_{DS} = 60V, V_{GS} = 0V$ $@ T_J = +125^\circ\text{C}$
Gate-Body Leakage	I_{GSS}	—	—	± 10	nA	$V_{GS} = \pm 20V, V_{DS} = 0V$
ON CHARACTERISTICS (Note 7)						
Gate Threshold Voltage	$V_{GS(th)}$	1.0	—	2.5	V	$V_{DS} = V_{GS}, I_D = 250\mu A$
Static Drain-Source On-Resistance	$R_{DS(on)}$	—	3.2	7.5	Ω	$V_{GS} = 5.0V, I_D = 0.05A$
			2.4	5.0		$V_{GS} = 10V, I_D = 0.5A$
			4.4	13.5		$V_{GS} = 10V, I_D = 0.5A$
On-State Drain Current	$I_{D(on)}$	0.5	1.0	—	A	$V_{GS} = 10V, V_{DS} = 7.5V$
Forward Transconductance	g_{FS}	80	—	—	mS	$V_{DS} = 10V, I_D = 0.2A$
Diode Forward Voltage	V_{SD}	—	0.78	1.5	V	$V_{GS} = 0V, I_S = 115mA$
DYNAMIC CHARACTERISTICS (Note 8)						
Input Capacitance	C_{iss}	—	22	50	pF	$V_{DS} = 25V, V_{GS} = 0V$ $f = 1.0MHz$
Output Capacitance	C_{oss}	—	11	25	pF	
Reverse Transfer Capacitance	C_{rss}	—	2.0	5.0	pF	
Gate Resistance	R_g	—	120	—	Ω	$V_{DS} = 0V, V_{GS} = 0V,$ $f = 1.0MHz$
Total Gate Charge ($V_{GS} = 4.5V$)	Q_g	—	223	—	pC	$V_{DS} = 10V, I_D = 250mA$
Gate-Source Charge	Q_{gs}	—	82	—		
Gate-Drain Charge	Q_{gd}	—	178	—		
Turn-On Delay Time	$t_{D(on)}$	—	2.8	—	ns	$V_{DD} = 30V, I_D = 0.2A,$ $R_L = 150\Omega, V_{GEN} = 10V,$ $R_{GEN} = 25\Omega$
Turn-On Rise Time	t_R	—	3.0	—		
Turn-Off Delay Time	$t_{D(off)}$	—	7.6	—		
Turn-Off Fall Time	t_F	—	5.6	—		

Notes: 7. Short duration pulse test used to minimize self-heating effect.
8. Guaranteed by design. Not subject to product testing.

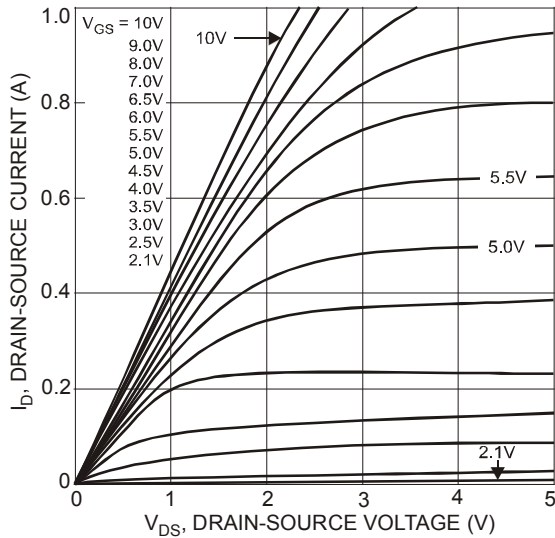


Fig. 1 On-Region Characteristics

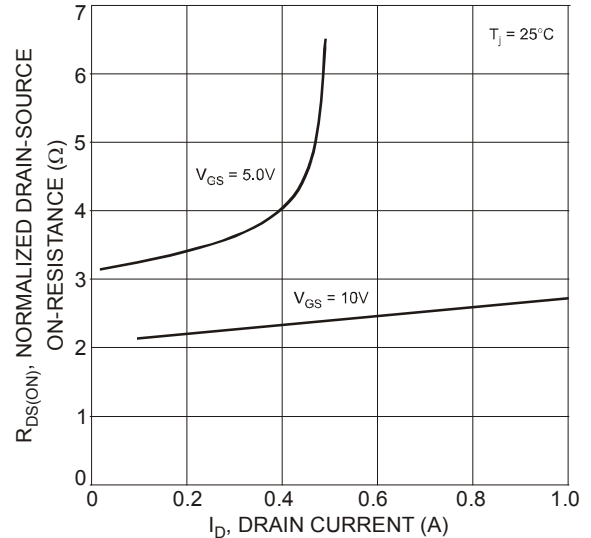


Fig. 2 On-Resistance vs. Drain Current

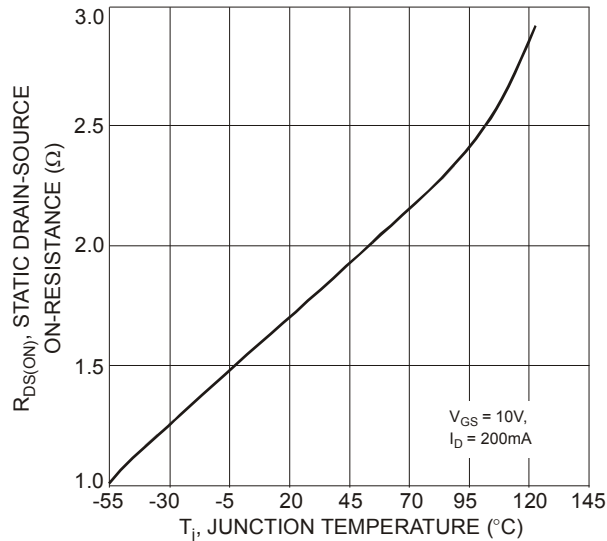


Fig. 3 On-Resistance vs. Junction Temperature

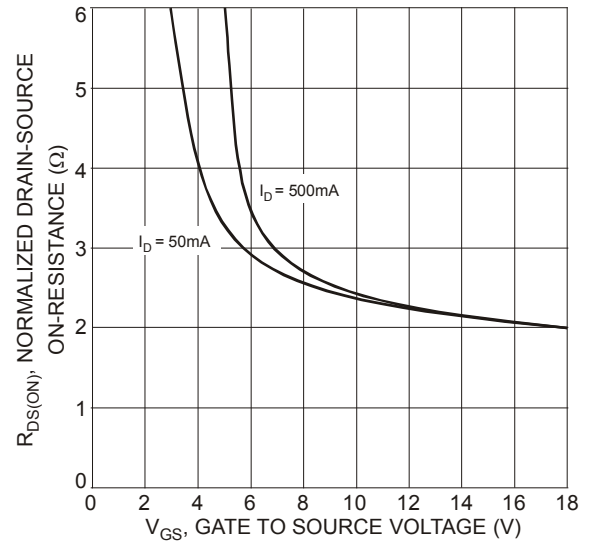


Fig. 4 On-Resistance vs. Gate-Source Voltage

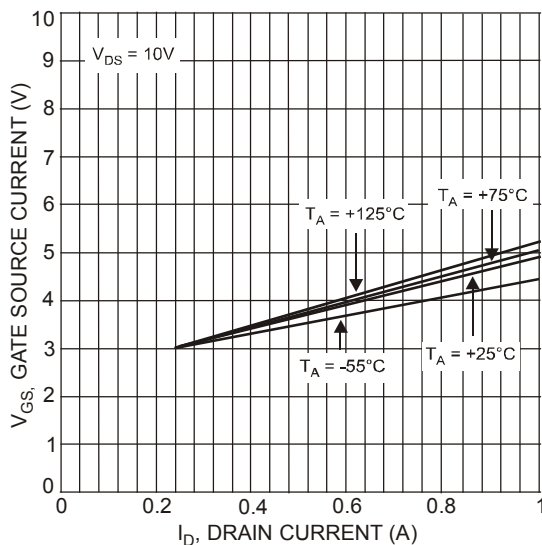


Fig. 5 Typical Transfer Characteristics

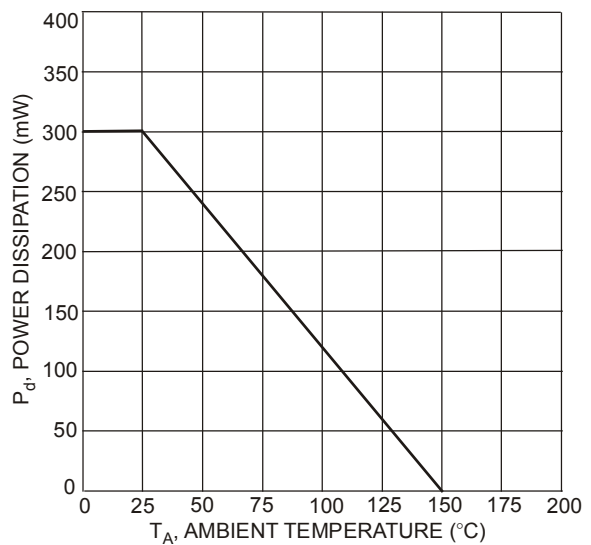
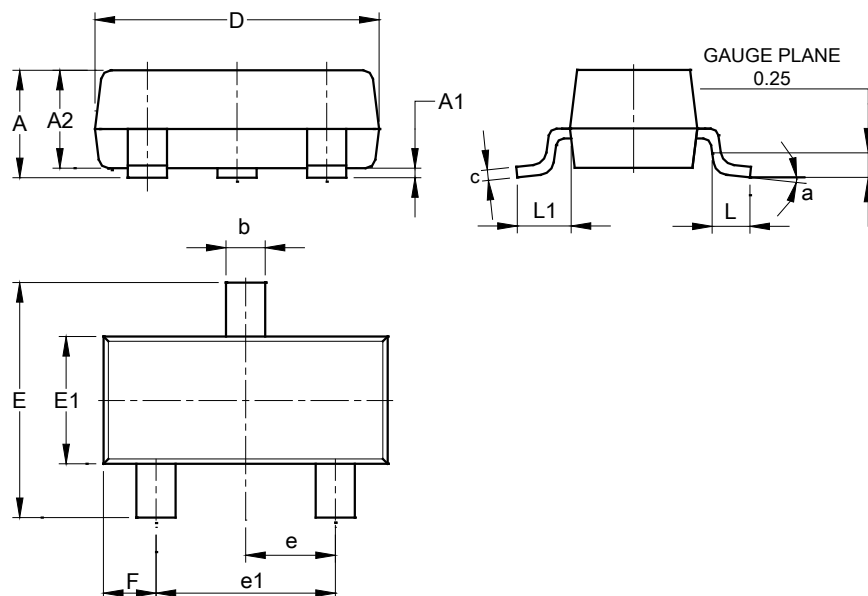


Fig. 6 Max Power Dissipation vs. Ambient Temperature

Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOT23 (Standard)

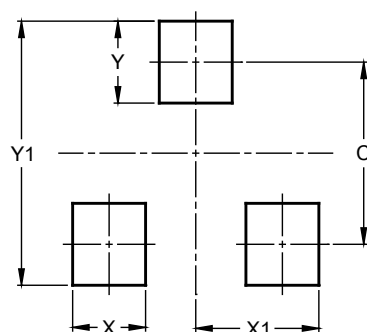


SOT23 (Standard)			
Dim	Min	Max	Typ
A	0.90	1.15	1.025
A1	0.00	0.10	0.05
A2	0.85	1.10	0.975
b	0.30	0.51	0.40
c	0.080	0.202	0.11
D	2.80	3.00	2.90
E	2.25	2.55	2.40
E1	1.20	1.40	1.30
e	0.89	1.03	0.915
e1	1.78	2.05	1.83
F	0.40	0.60	0.535
L1	0.45	0.61	0.55
L	0.25	0.55	0.40
a	0°	8°	--
All Dimensions in mm			

Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOT23 (Standard)



Dimensions	Value (in mm)
C	2.0
X	0.8
X1	1.35
Y	0.9
Y1	2.9

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