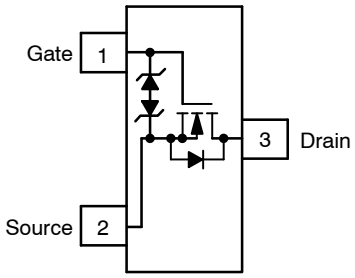
Leiditech

2N7002KT

SOT-523 Plastic-Encapsulate Mosfets

Features

- High density cell design for low $R_{DS\ (ON)}$
- Voltage controlled small signal switch
- Rugged and reliable
- High saturation current capability



(Top View)

Applications

- Load Switch for Portable Devices
- DC/DC Converter

Marking: KN

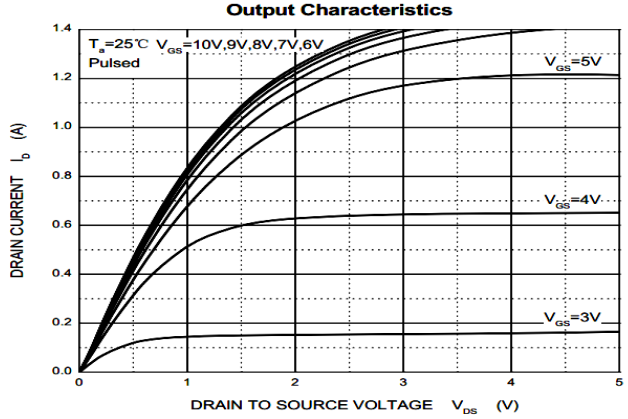
Maximum Ratings (T_a=25°C unless otherwise specified)

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source voltage	60	V
V_{GS}	Gate-Source voltage	20	V
I_D	Drain Current	115	mA
P_D	Power Dissipation	150	mW
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	833	°C/W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	-55 to +150	°C

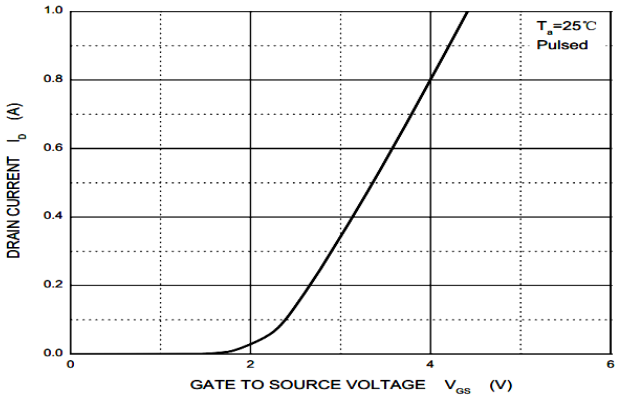
Electrical Characteristics (T_a=25°C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS} = 0V, I_D = 250μA	60			V
$V_{GS(th)}$	Gate-Threshold Voltage	V_{DS} = V_{GS}, I_D = 250μA	1		2.5	V
I_{GSS}	Gate-body Leakage current	V_{DS}=0 V, V_{GS}=±20 V			±80	nA
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=60 V, V_{GS}=0 V			80	nA
$I_{D(ON)}$	On-state Drain Current	V_{GS}=10 V, V_{DS}=7 V	500			mA
$R_{DS(on)}$	Drain-Source On-Resistance	V_{GS} =10V, I_D = 500mA			5	Ω
		V_{GS} =5V, I_D = 50mA			7	
g_{fs}	Forward Trans conductance	V_{DS} =10V, I_D =200mA	80			mS
$V_{DS(on)}$	Drain-source on-voltage	V_{GS}=10V, I_D=500mA			3.75	V
		V_{GS}=5V, I_D=50mA			0.375	
V_{SD}	Diode Forward Voltage	I_S=115mA, V_{GS}=0 V	0.55		1.2	V
C_{iss}	Input Capacitance	V_{GS} = 0V V_{DS} = 25V f = 1.0MHz			50	pF
C_{oss}	Output Capacitance				25	
C_{rss}	Reverse Transfer Capacitance				5	
$t_{d(on)}$	Turn-On Time	V_{DD}=25 V, R_L=50Ω, I_D=500mA,V_{GEN}=10V, R_G=25 Ω			20	ns
$t_{d(off)}$	Turn-Off Time				40	

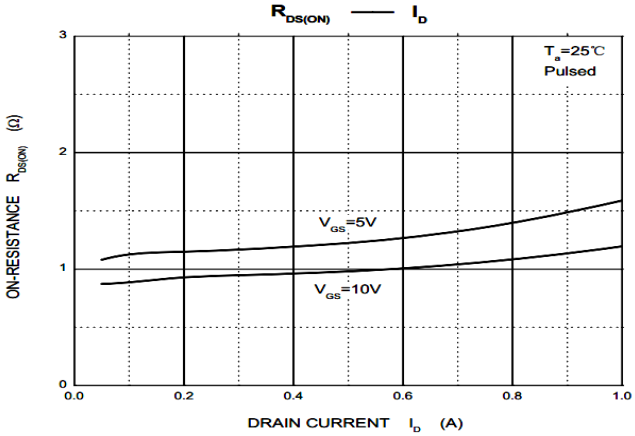
Output Characteristics



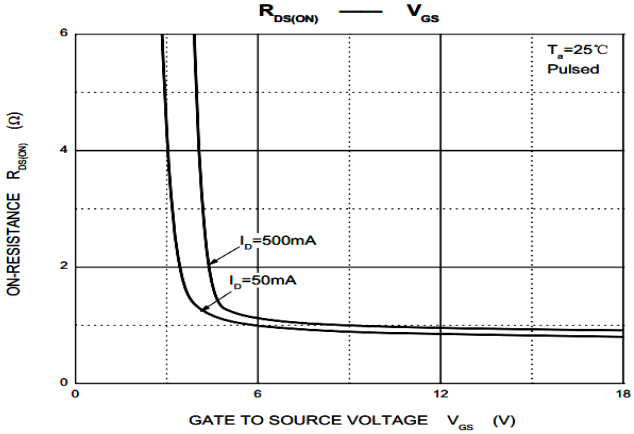
Transfer Characteristics



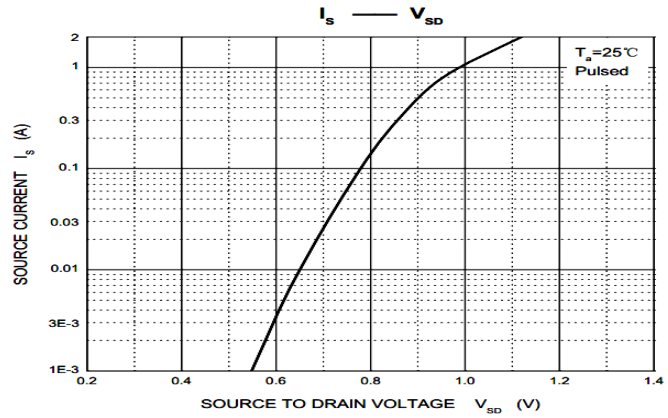
$R_{DS(ON)}$ —— I_D



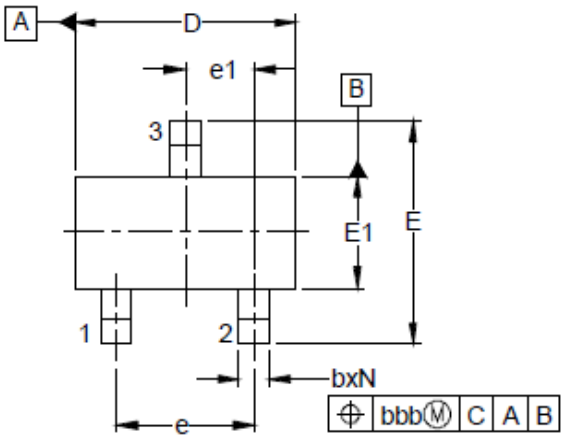
$R_{DS(ON)}$ —— V_{GS}



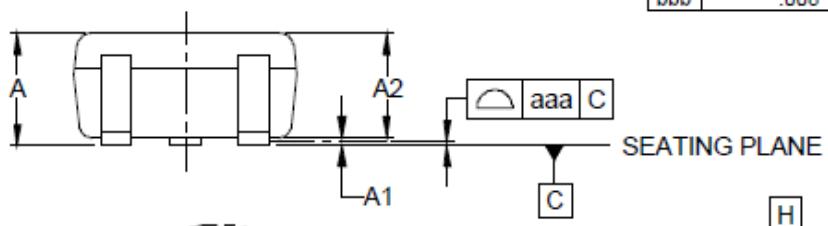
I_S —— V_{SD}

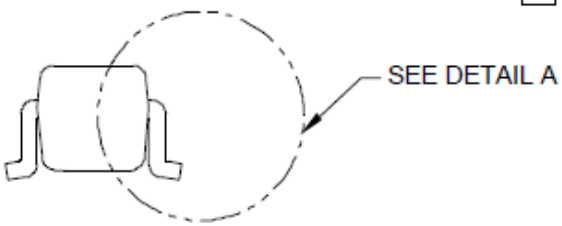


SOT-523 PACKAGE OUTLINE & DIMENSIONS

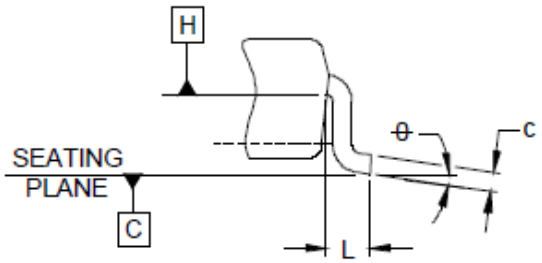


DIMENSIONS						
DIM	INCHES			MILLIMETERS		
	MIN	NOM	MAX	MIN	NOM	MAX
A	.023	-	.035	0.60	-	0.90
A1	.000	-	.004	0.00	-	0.10
A2	.023	.030	.031	0.60	0.75	0.80
b	.005	-	.012	0.15	-	0.30
c	.003	-	.008	0.10	-	0.20
D	.059	.063	.067	1.50	1.60	1.70
E	.057	.063	.069	1.45	1.60	1.75
E1	.029	.031	.033	0.75	0.80	0.85
e	.039 BSC			1.00 BSC		
e1	.020 BSC			0.50 BSC		
L	(.009)			(0.22)		
N	3			3		
θ	0°	-	8°	0°	-	8°
aaa	.004			0.10		
bbb	.008			0.20		



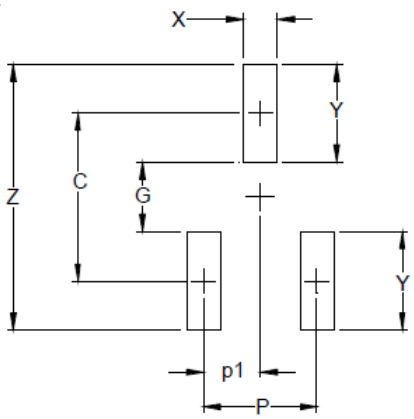


SIDE VIEW



DETAIL A

* SOLDERING FOOTPRINT



DIMENSIONS		
DIM	INCHES	MILLIMETERS
C	(.055)	(1.40)
P	.039	1.00
p1	.020	0.50
G	.024	0.60
X	.016	0.40
Y	.031	0.80
Z	.087	2.20

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