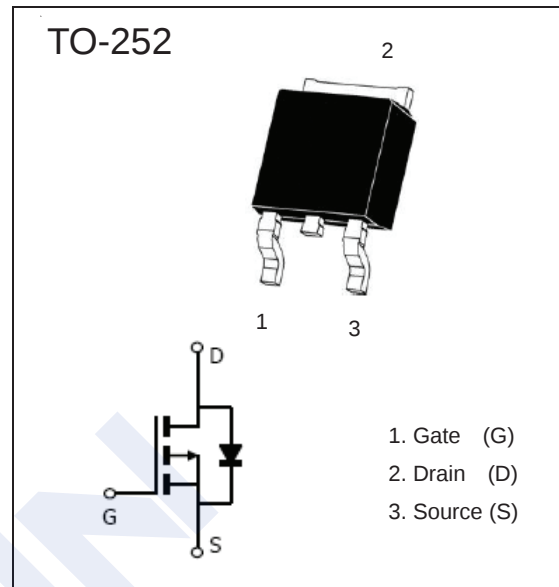


P-Channel MOSFET

2KJ6061

■ Features

- $V_{DS} (V) = -40V$
- $I_D = -15A$
- $R_{DS(ON)} < 33.5m\Omega$ @ $V_{GS} = -10V$
- $R_{DS(ON)} < 43m\Omega$ @ $V_{GS} = -4.5V$
- High density cell design for ultra low R_{dson}
- Fully characterized avalanche voltage and current

■ Absolute Maximum Ratings ($T_c = 25^\circ C$ Unless otherwise noted)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-40	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current	I_D	-15	A
Continuous Drain Current ($T_c = 100^\circ C$)		-9.5	
Pulsed Drain Current		-20	
Single pulse avalanche energy (Note 1)	EAS	136	mJ
Power Dissipation	P_D	66.5	W
Thermal Resistance, Junction- to-Case (Note 2)	$R_{\theta JC}$	1.88	$^\circ C/W$
Junction Temperature	T_J	150	$^\circ C$
Junction Storage Temperature Range	T_{stg}	-55 to 150	

Notes:

1. EAS condition: $T_J = 25^\circ C$, $V_{DD} = -20V$, $V_G = -10V$, $L = 1mH$, $R_g = 25\Omega$, $I_{AS} = 16.5A$
2. Surface Mounted on FR4 Board, $t \leq 10sec$.

2KJ6061

■ Electrical Characteristics ($T_C = 25^\circ\text{C}$ Unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	I _D =-250μA, V _{GS} =0V	-40			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-40V, V _{GS} =0V			-1	μA
Gate-Body Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
On Characteristics (Note 3)						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-1.1		-2.2	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-14A			33.5	mΩ
		V _{GS} =-4.5V, I _D =-10A			43	
Forward Transconductance	g _{FS}	V _{DS} =-5V, I _D =-12A	17			S
Dynamic Characteristics (Note 4)						
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =-20V, f=1MHz		1960		pF
Output Capacitance	C _{oss}			270		
Reverse Transfer Capacitance	C _{rss}			210		
Switching Characteristics (Note 4)						
Total Gate Charge	Q _g	V _{DS} =-20V, I _D =-14A, V _{GS} = -10V		52		nC
Gate Source Charge	Q _{gs}			12		
Gate Drain Charge	Q _{gd}			11		
Turn-On DelayTime	t _{d(on)}	V _{DD} =-20V, I _D =-14A, V _{GS} = -10 V, R _G = 3 Ω		10		ns
Turn-On Rise Time	t _r			18		
Turn-Off DelayTime	t _{d(off)}			38		
Turn-Off Fall Time	t _f			24		
Drain-Source Diode Characteristics						
Maximum Body-Diode Continuous Current	I _S				-15	A
Diode Forward Voltage (Note 3)	V _{SD}	I _{SD} =-14 A,V _{GS} =0V			-1.2	V
Reverse Recovery Time	t _{rr}	T _J = 25℃,I _F =-15A, di/dt = 100A/μs (Note 3)		25		nS
Reverse Recovery Charge	Q _{rr}			21		nC

Notes:

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

4. Guaranteed by design, not subject to production

■ Marking

Marking	J6061 K***
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2KJ6061

■ Typical Electrical and Thermal Characteristics

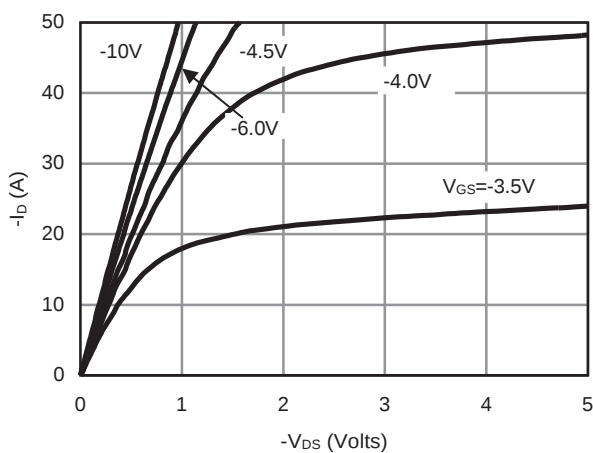


Figure 1: On-Region Characteristics

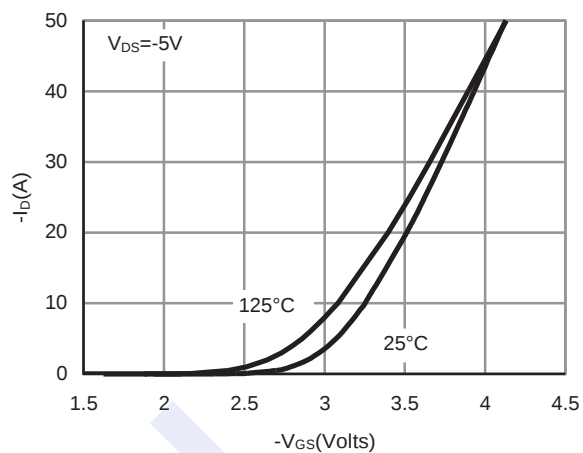


Figure 2: Transfer Characteristics

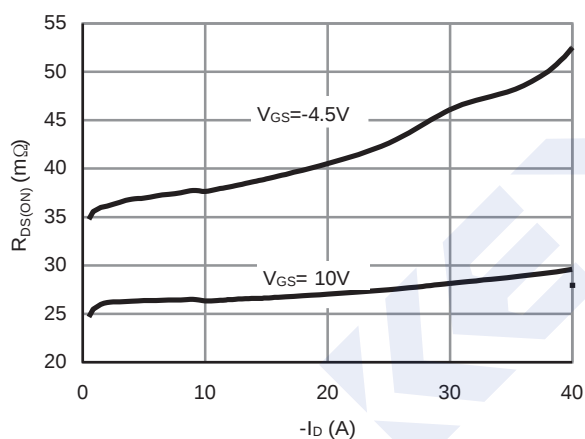


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

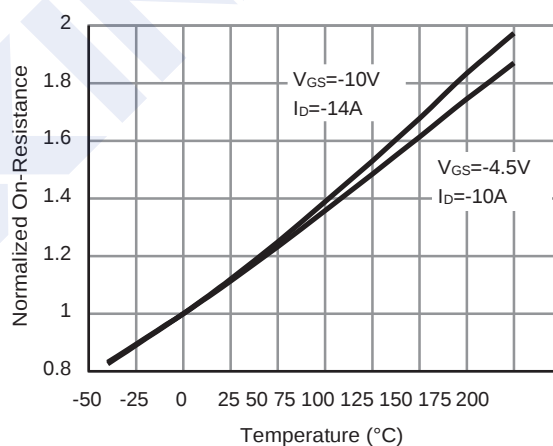


Figure 4: On-Resistance vs. Junction Temperature

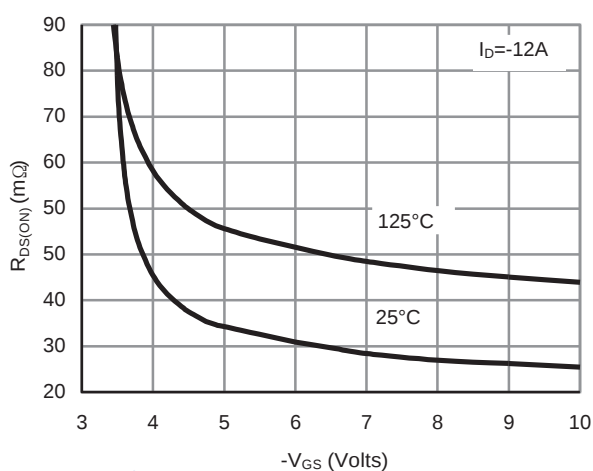


Figure 5: On-Resistance vs. Gate-Source Voltage

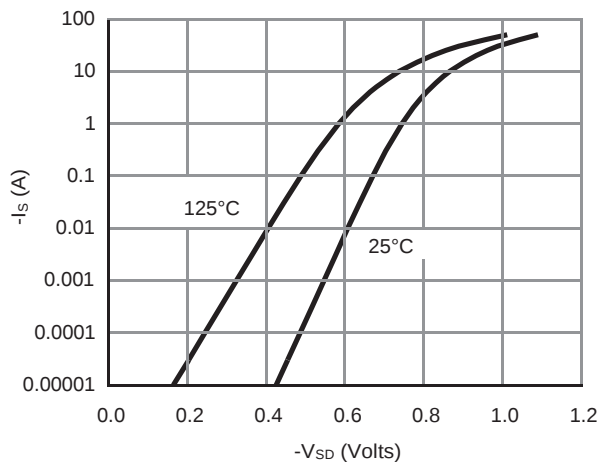


Figure 6: Body-Diode Characteristics

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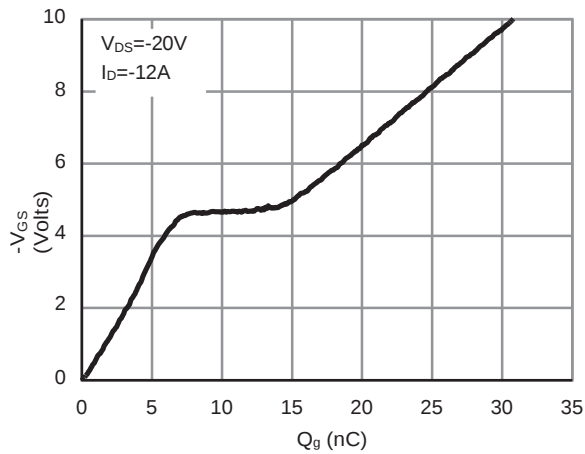


Figure 7: Gate-Charge Characteristics

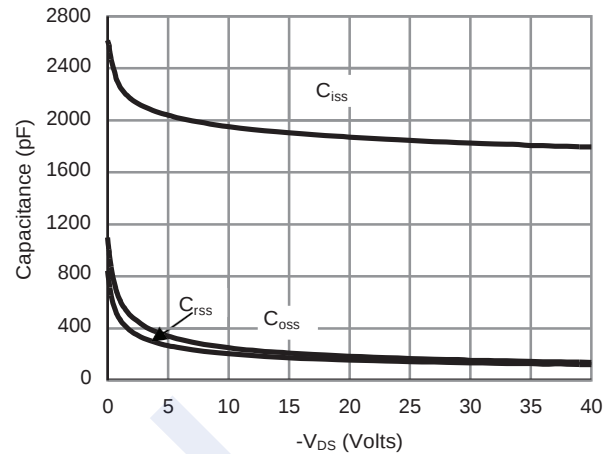


Figure 8: Capacitance Characteristics

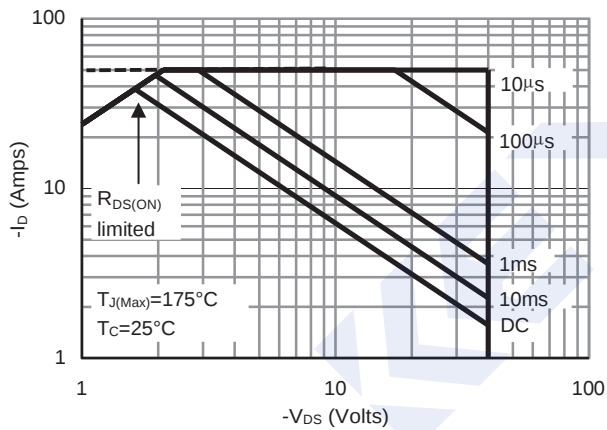


Figure 9: Maximum Forward Biased Safe Operating Area

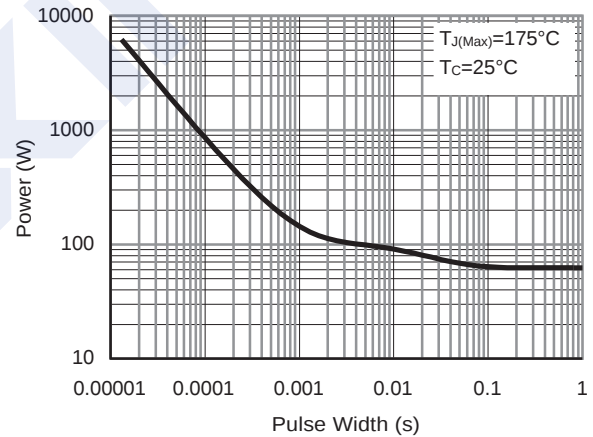


Figure 10: Single Pulse Power Rating Junction-to-Case

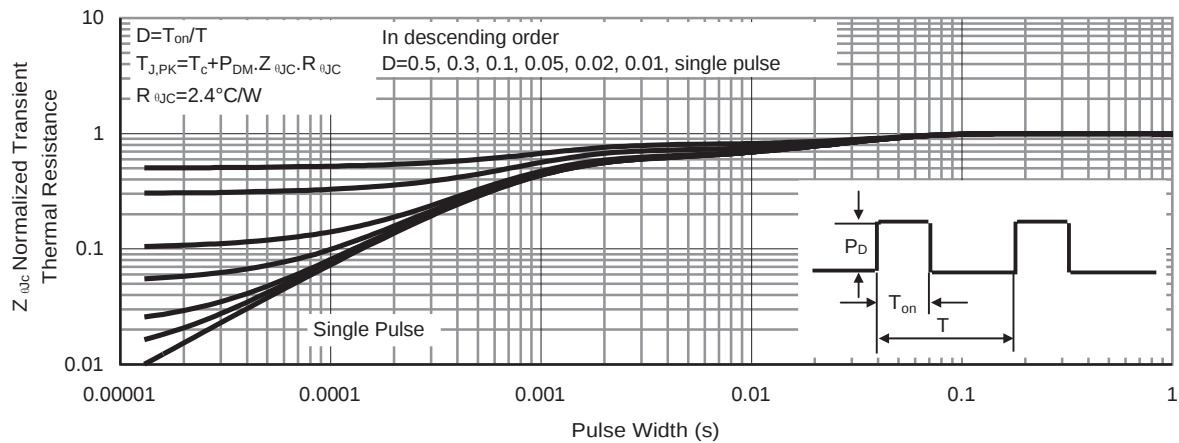
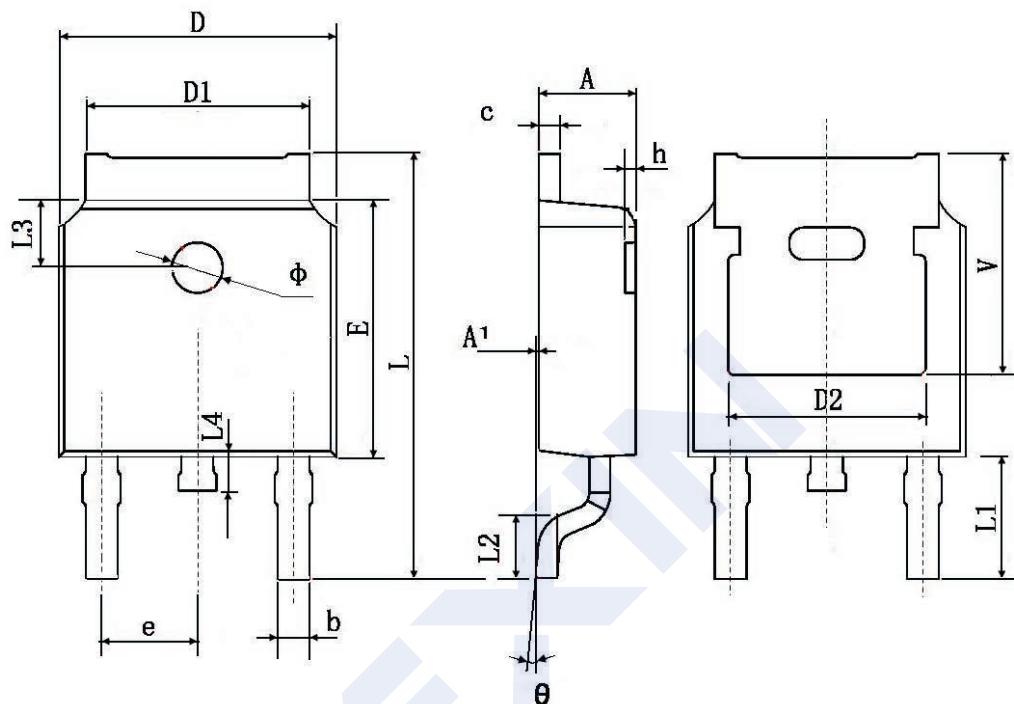


Figure 11: Normalized Maximum Transient Thermal Impedance

2KJ6061

■ Package Dimension

TO-252



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.660	0.860	0.026	0.034
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 TYP.		0.190 TYP.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.800	10.400	0.386	0.409
L1	2.900 TYP.		0.114 TYP.	
L2	1.400	1.700	0.055	0.067
L3	1.600 TYP.		0.063 TYP.	
L4	0.600	1.000	0.024	0.039
Φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.350 TYP.		0.211 TYP.	