

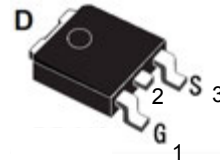
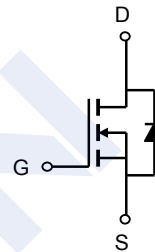
N-Channel MOSFET

2KK5095

■ Features

- $V_{DS}(V) = 100V$
- $I_D = 10.8 A$ ($V_{GS} = 10V$)
- $R_{DS(ON)} < 130m\Omega$ ($V_{GS} = 10V$)
- $R_{DS(ON)} < 150m\Omega$ ($V_{GS} = 4.5V$)

TO-252



1. Gate (G)
2. Drain (D)
3. Source (S)

■ Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	100	V
Gate-Source Voltage		V_{GS}	± 20	
Continuous Drain Current	$T_c = 25^\circ C$	I_D	10.8	A
	$T_c = 70^\circ C$		8.7	
Pulsed Drain Current		I_{DM}	25	
Single Pulse Avalanche Energy (Note.1)		EAS	2.5	mJ
Power Dissipation	$T_c = 25^\circ C$	P_D	35.8	W
	$T_c = 70^\circ C$		22.9	
Thermal Resistance.Junction- to-Ambient		R_{thJA}	50	$^\circ C/W$
Thermal Resistance.Junction- to-Case		R_{thJC}	3.5	
Junction Temperature		T_J	150	$^\circ C$
Storage Temperature Range		T_{stg}	-55 to 150	

Note.1: EAS is tested at starting $T_J = 25^\circ C$, $L = 0.3mH$, $I_{AS} = 4A$, $V_{DS} = 50V$, $V_{GS} = 10V$

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■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{DSS}	I _D =250 μA, V _{GS} =0V	100			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =100 V, V _{GS} =0V			1	μA
	I _{DSS}	V _{DS} =100 V, V _{GS} =0V, T _J =55°C			5	
Gate-Body Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250 μA	1		2	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =8A			130	mΩ
		V _{GS} =4.5V, I _D =6A			150	
Forward Transconductance	g _{FS}	V _{DS} =10V, I _D =8A		13.5		S
Gate Resistance	R _g	V _{GS} = 0 V, V _{DS} = 0 V, f = 1 MHz		12		Ω
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =25V, f=1MHz		355		pF
Output Capacitance	C _{oss}			16		
Reverse Transfer Capacitance	C _{rss}			11		
Total Gate Charge (10V)	Q _g	V _{GS} =10V, V _{DS} =50V, I _D =8A		6.7		nC
Gate Source Charge	Q _{gs}			1.3		
Gate Drain Charge	Q _{gd}			1.8		
Turn-On DelayTime	t _{d(on)}	V _{GS} = 10V, V _{DS} = 50V, I _D = 8A, R _G = 3Ω		6.7		ns
Turn-On Rise Time	t _r			3.6		
Turn-Off DelayTime	t _{d(off)}			13.7		
Turn-Off Fall Time	t _f			3.3		
Body Diode Reverse Recovery Time	t _{rr}	I _F = 8A, di/dt= 100A/μs		36.5		nC
Body Diode Reverse Recovery Charge	Q _{rr}			58.5		
Maximum Body-Diode Continuous Current	I _S				8	A
Diode Forward Voltage	V _{SD}	I _S =8A, V _{GS} =0V			1.2	V

■ Marking

Marking	K5095 KC***
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■ Typical Characteristics

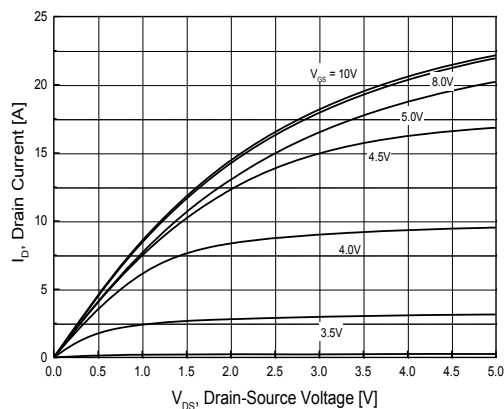


Fig.1 On-Region Characteristics

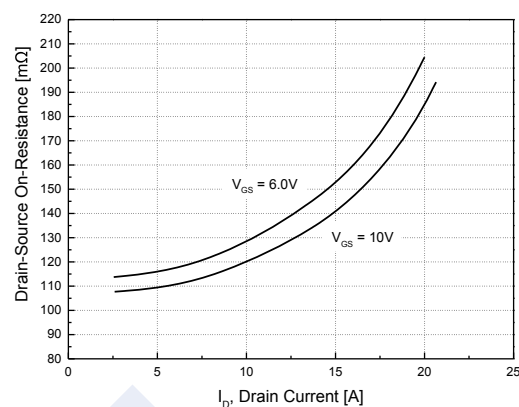


Fig.2 On-Resistance Variation with Drain Current and Gate Voltage

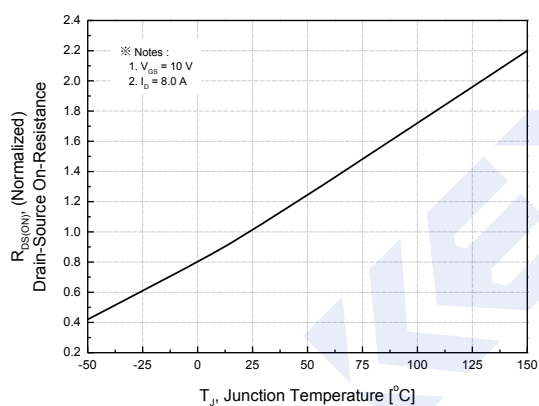


Fig.3 On-Resistance Variation with Temperature

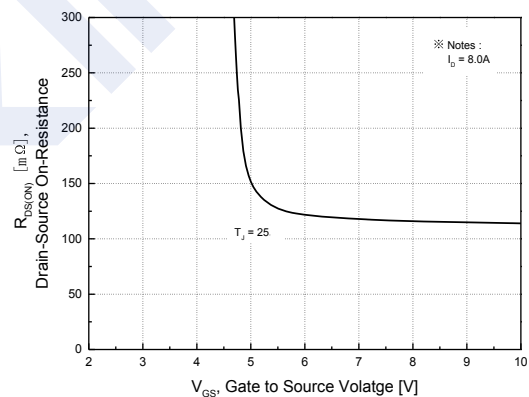


Fig.4 On-Resistance Variation with Gate to Source Voltage

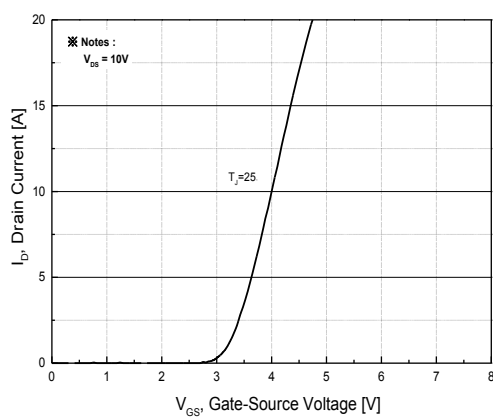


Fig.5 Transfer Characteristics

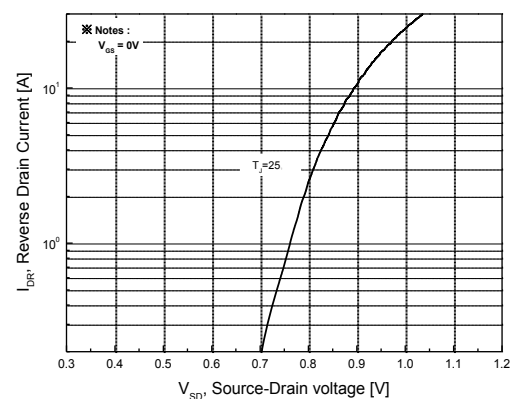


Fig.6 Body Diode Forward Voltage Variation with Source Current and Temperature

N-Channel MOSFET

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■ Typical Characteristics

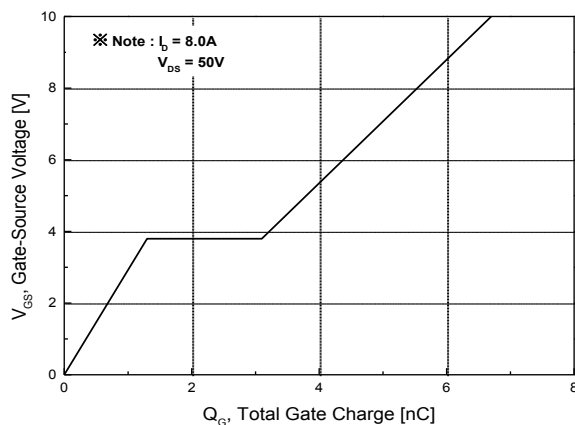


Fig.7 Gate Charge Characteristics

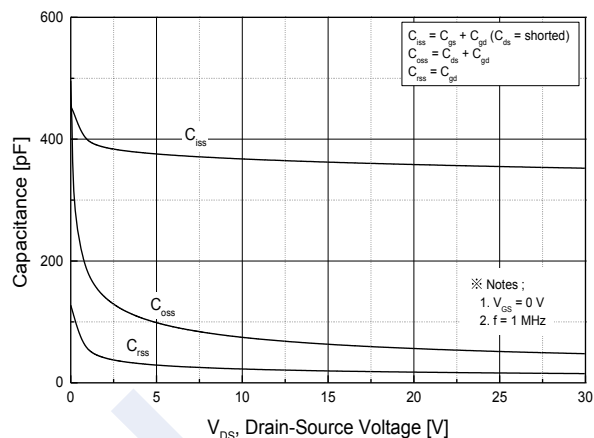


Fig.8 Capacitance Characteristics

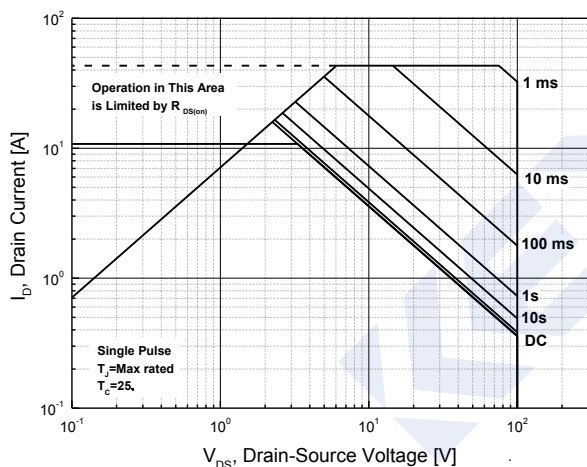


Fig.9 Maximum Safe Operating Area

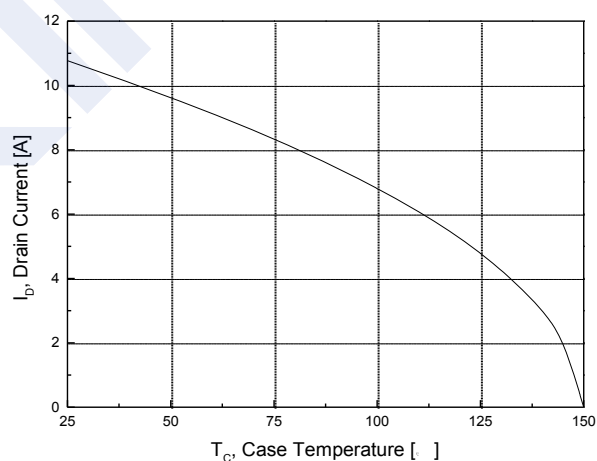


Fig.10 Maximum Drain Current vs. Case Temperature

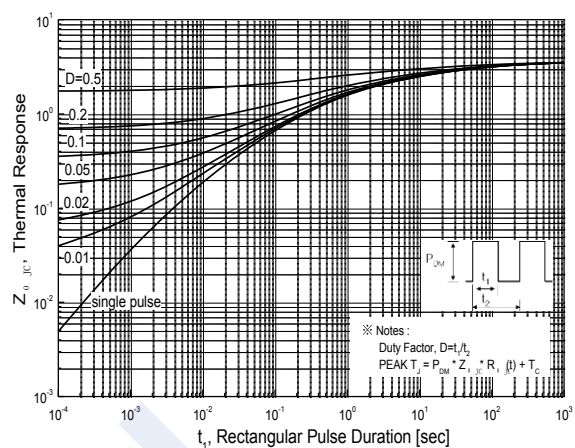


Fig.11 Transient Thermal Response Curve

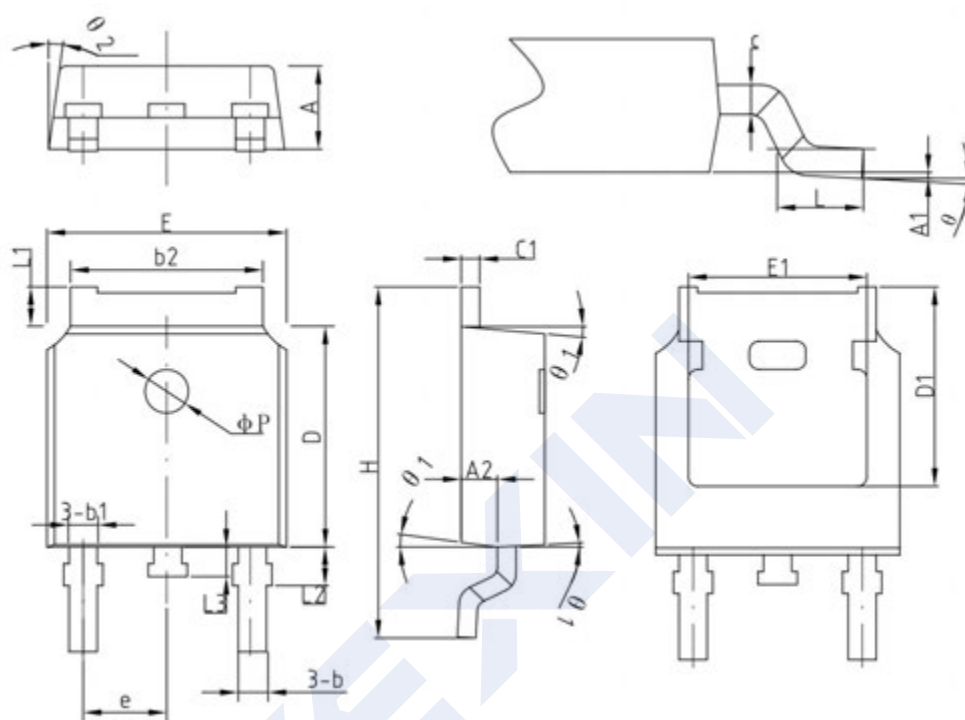
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■ Package Dimension

TO-252

Units: mm



COMMON DIMENSIONS
(UNITS OF MEASURE=MILLIMETER)

SYMBOL	MIN	NOM	MAX
A	2.2	2.30	2.38
A1	0	—	0.10
A2	0.90	1.01	1.10
b	0.71	0.76	0.86
b1		0.76	
b2	5.13	5.33	5.46
c	0.47	0.50	0.60
c1	0.47	0.50	0.60
D	6.0	6.10	6.20
D1	—	5.30	—
E	6.50	6.60	6.70
E1	—	4.80	—
e	2.286BSC		
H	9.70	10.10	10.40
L	1.40	1.50	1.70
L1	0.90	—	1.25
L2		1.05	
L3		0.8	
ΦP		1.2	
θ	0°	—	8°
θ1	5°	7°	9°
θ2	5°	7°	9°