

KDC6020C(FDC6020C)

Features

N-Channel : $V_{DS}=20V$ $I_D=5.9A$

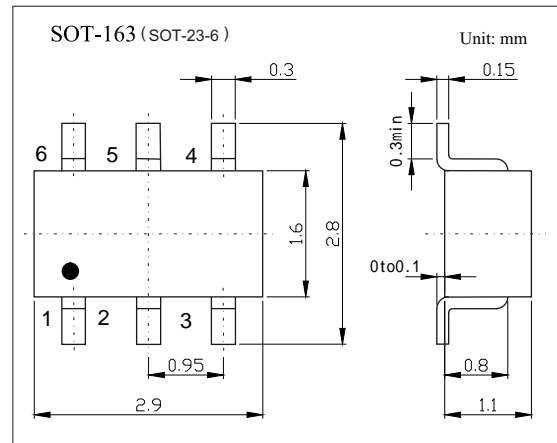
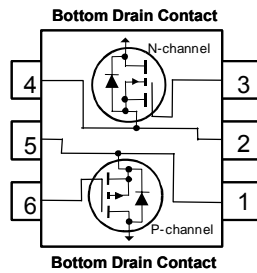
$R_{DS(ON)} < 27m$ ($V_{GS} = 4.5V$)

$R_{DS(ON)} < 39m$ ($V_{GS} = 2.5V$)

P-Channel : $V_{DS}=-20V$ $I_D=-4.2A$

$R_{DS(ON)} < 55m$ ($V_{GS} = -4.5V$)

$R_{DS(ON)} < 82m$ ($V_{GS} = -2.5V$)



Absolute Maximum Ratings $T_a = 25$

Parameter	Symbol	N-Channel	P-Channel	Unit
Drain-Source Voltage	V_{DS}	20	-20	V
Gate-Source Voltage	V_{GS}	± 12	± 12	
Continuous Drain Current	I_D	5.9	-4.2	A
Pulsed Drain Current	I_{DM}	20	-20	
Power Dissipation for Dual Operation	P_D	1.6		W
Power Dissipation for single Operation		1.8		
Thermal Resistance.Junction- to-Ambient	R_{thJA}	68		/W
Thermal Resistance.Junction- to-Case	R_{thc}	1		
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150		



Electrical Characteristics Ta = 25

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Parameter	Symbol	Testconditons	Type	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{DSS}	I _D =250 μA, V _{GS} =0V	N-CH	20			V
		I _D =-250 μA, V _{GS} =0V	P-CH	-20			
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =16V, V _{GS} =0V	N-CH			1	μA
		V _{DS} =-16V, V _{GS} =0V	P-CH			-1	
Gate-Body leakage current	I _{GSS}	V _{DS} =0V, V _{GS} = ± 12V	N-CH			± 100	nA
		V _{DS} =0V, V _{GS} = ± 12V	P-CH			± 100	
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =250 μA	N-CH	0.6	1	1.5	V
		V _{DS} =V _{GS} I _D =-250 μA	P-CH	-0.6	-1	-1.5	
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =4.5V, I _D =5.9A	N-CH		23	27	m
		V _{GS} =4.5V, I _D =5.9A T _J =125			31	39	
		V _{GS} =2.5V, I _D =4.9A			33	39	
		V _{GS} =-4.5V, I _D =-4.2A	P-CH		45	55	
		V _{GS} =-4.5V, I _D =-4.2A T _J =125			58	75	
		V _{GS} =-2.5V, I _D =-3.4A			65	82	
Forward Transconductance	g _{FS}	V _{DS} =5V, I _D =5.9A	N-CH		23		S
		V _{DS} =-5V, I _D =-4.2A	P-CH		13		
Input Capacitance	C _{iss}	N-Channel:	N-CH		677		pF
			P-CH		753		
Output Capacitance	C _{oss}	P-Channel: V _{GS} =0V, V _{DS} =10V, f=1MHz	N-CH		171		
			P-CH		163		
Reverse Transfer Capacitance	C _{rss}	N-Channel: V _{GS} =0V, V _{DS} =-10V, f=1MHz	N-CH		91		
			P-CH		83		
Gate resistance	R _g	V _{GS} =15mV, f=1 MHz	N-CH		2.2		
			P-CH		8		
Total Gate Charge	Q _g	N-Channel: V _{GS} =4.5V, V _{DS} =10V, I _D =5.9A	N-CH		6	8	nC
			P-CH		7	10	
Gate Source Charge	Q _{gs}	P-Channel: V _{GS} =-4.5V, V _{DS} =-10V, I _D =-4.2A	N-CH		1.5		
			P-CH		1.6		
Gate Drain Charge	Q _{gd}		N-CH		1.8		
			P-CH		1.9		
Turn-On DelayTime	t _{d(on)}	N-Channel: V _{GS} =4.5V, V _{DS} =10V, I _D =1A, R _{GEN} =6	N-CH		11	20	ns
			P-CH		13	23	
Turn-On Rise Time	t _r	P-Channel: V _{GS} =-4.5V, V _{DS} =-10V, I _D =-1A, R _{GEN} =6	N-CH		16	29	
			P-CH		8	16	
Turn-Off DelayTime	t _{d(off)}		N-CH		18	32	
			P-CH		26	42	
Turn-Off Fall Time	t _f		N-CH		7	14	
			P-CH		14	52	
Body Diode Reverse Recovery Time	t _{rr}	I _F =5.9A, dI/dt=100A/μs I _F =-4.2A, dI/dt=100A/μs	N-CH		15		
			P-CH		17		
Body Diode Reverse Recovery Charge	Q _{rr}	I _F =5.9A, dI/dt=100A/μs I _F =-4.2A, dI/dt=100A/μs	N-CH		4		nC
			P-CH		6		
Maximum Body-Diode Continuous Current	I _S		N-CH			1.3	A
			P-CH				
Diode Forward Voltage	V _{SD}	I _S =1.3A, V _{GS} =0V	N-CH		0.7	1.2	V
		I _S =-1.3A, V _{GS} =0V	P-CH		-0.8	-1.2	