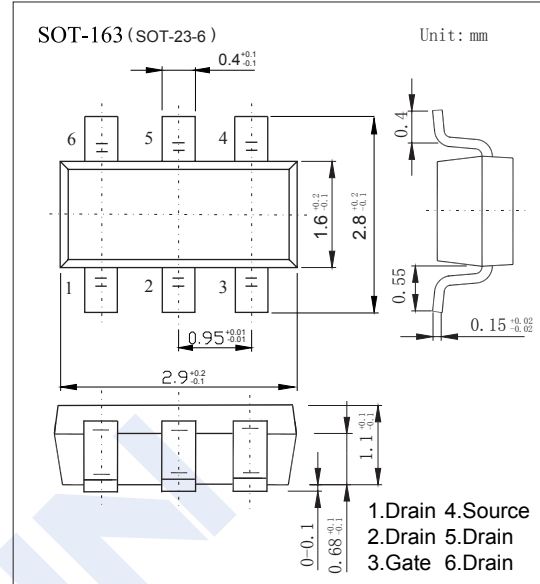
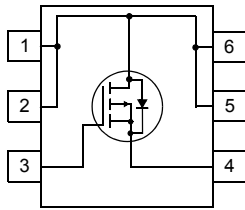


P-Channel MOSFET

FDC658AP (KDC658AP)

■ Features

- $V_{DS} = -30V$
- $I_D = -4 A$ ($V_{GS} = -10V$)
- $R_{DS(ON)} < 50m\Omega$ ($V_{GS} = -10V$)
- $R_{DS(ON)} < 75m\Omega$ ($V_{GS} = -4.5V$)
- Low Gate Charge



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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 25	
Continuous Drain Current (Note.1)	I_D	-4	A
Pulsed Drain Current	I_{DM}	-20	
Power Dissipation (Note.1) (Note.2)	P_D	1.6	W
		0.8	
Thermal Resistance.Junction- to-Ambient (Note.1)	R_{thJA}	78	$^\circ C/W$
Thermal Resistance.Junction- to-Case	R_{thJC}	30	
Junction Temperature	T_J	150	$^\circ C$
Junction Storage Temperature Range	T_{stg}	-55 to 150	

Note.1: $78^\circ C/W$ when mounted on a $1 in^2$ pad of 2 oz copper

Note.2: $156^\circ C/W$ when mounted on a minimum pad of 2 oz copper

P-Channel MOSFET

FDC658AP (KDC658AP)

■ 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	-30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-24V, V _{GS} =0V			-1	μA
Gate-Body leakage current	I _{GSS}	V _{DS} =0V, V _{GS} =±25V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =-250 μA	-1		-3	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-4A			50	mΩ
		V _{GS} =-10V, I _D =-4A T _J =125°C			70	
		V _{GS} =-4.5V, I _D =-3.4A			75	
On state drain current	I _{D(ON)}	V _{GS} =-10V, V _{DS} =-5V (Note.1)	-20			A
Forward Transconductance	g _{FS}	V _{DS} =-5V, I _D =-4A (Note.1)		8.4		S
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =-15V, f=1MHz		470		pF
Output Capacitance	C _{oss}			126		
Reverse Transfer Capacitance	C _{rss}			61		
Total Gate Charge	Q _g	V _{GS} =-5V, V _{DS} =-15V, I _D =-4A (Note.1)			8.1	nC
Gate Source Charge	Q _{gs}			2.1		
Gate Drain Charge	Q _{gd}			2		
Turn-On DelayTime	t _{d(on)}	V _{DD} = -15V, I _D = -1A V _{GS} = -10V, R _{GEN} = 6Ω (Note.1)			14	ns
Turn-On Rise Time	t _r				22	
Turn-Off DelayTime	t _{d(off)}				29	
Turn-Off Fall Time	t _f				12	
Maximum Body-Diode Continuous Current	I _S				-1.3	A
Diode Forward Voltage	V _{SD}	I _S =-1.3A, V _{GS} =0V			-1.2	V

Note.1:Pulse Test: Pulse Width < 300 us, Duty Cycle < 2.0%

■ Marking

Marking	.58A
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P-Channel MOSFET FDC658AP (KDC658AP)

■ Typical Characteristics

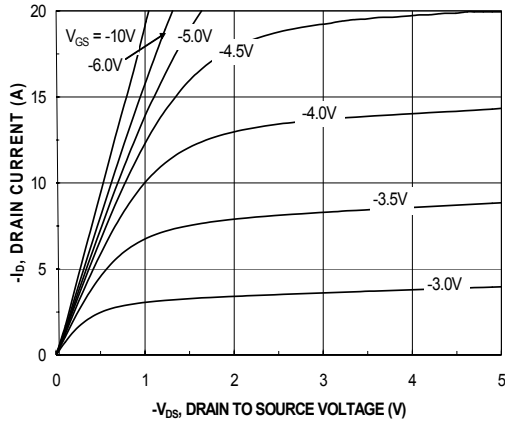


Figure 1. On-Region Characteristics

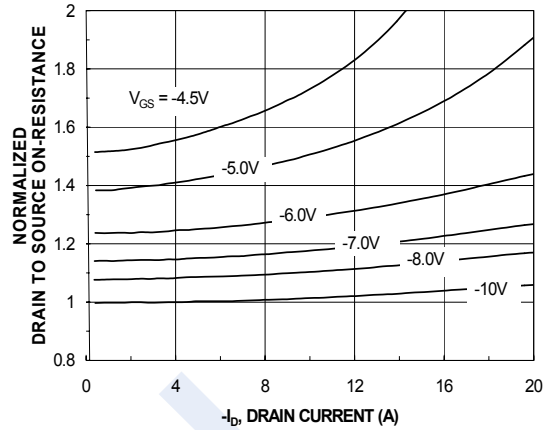


Figure 2. Normalized On-Resistance vs Drain Current and Gate Voltage

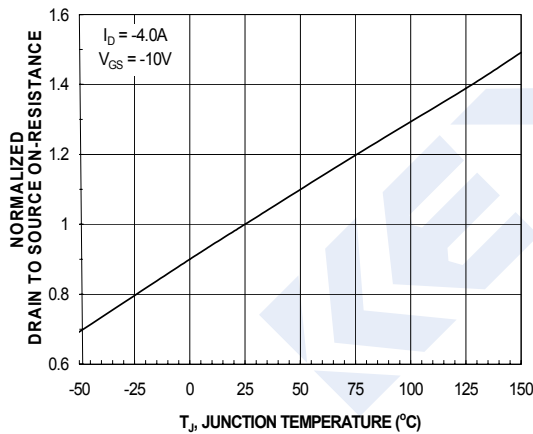


Figure 3. Normalized On-Resistance vs Junction Temperature

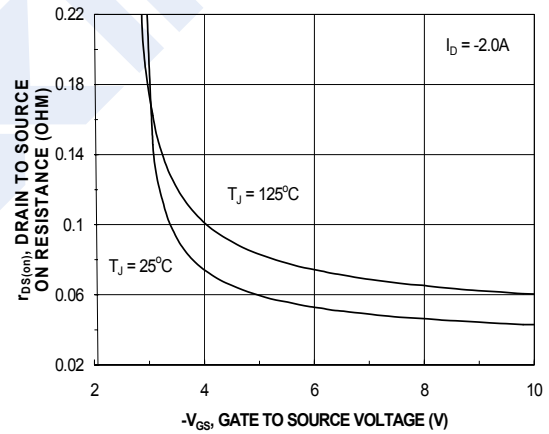


Figure 4. On-Resistance vs Gate to Source Voltage

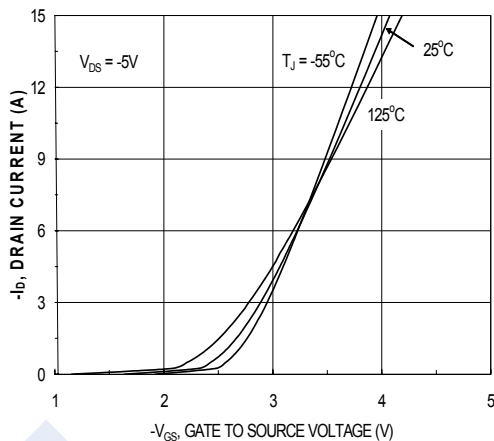


Figure 5. Transfer Characteristics

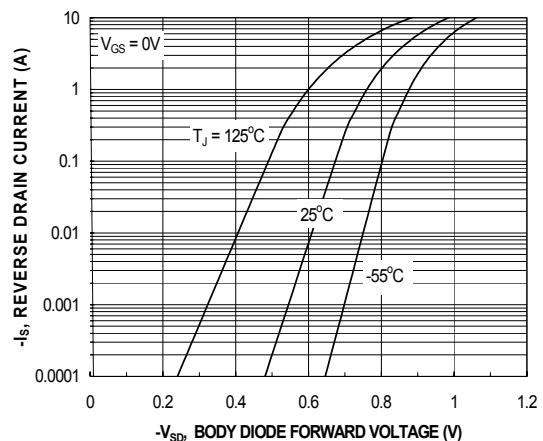


Figure 6. Source to Drain Diode Forward Voltage vs Source Current

P-Channel MOSFET FDC658AP (KDC658AP)

■ Typical Characteristics

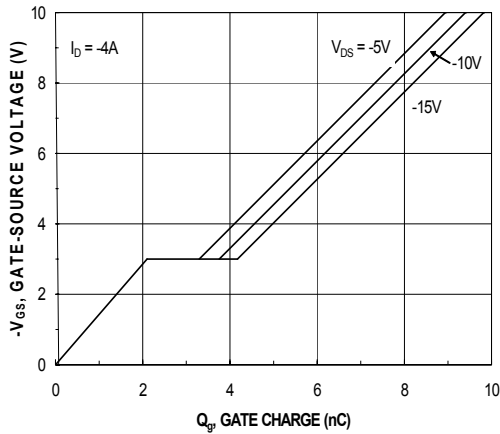


Figure 7. Gate Charge Characteristics

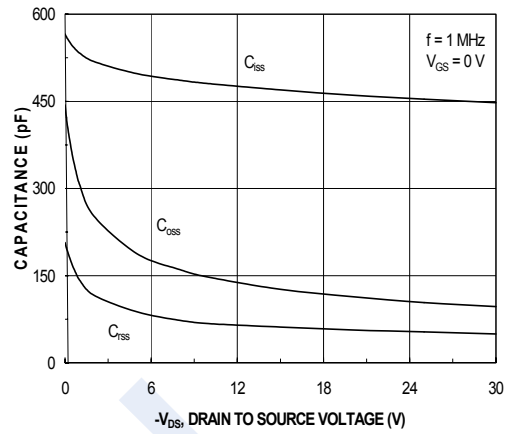


Figure 8. Capacitance vs Drain to Source Voltage

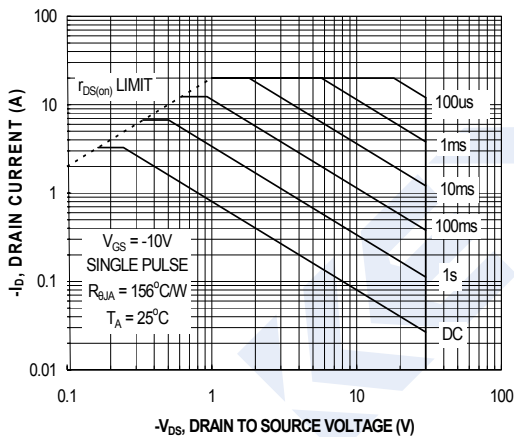


Figure 9. Forward Bias Safe Operating Area

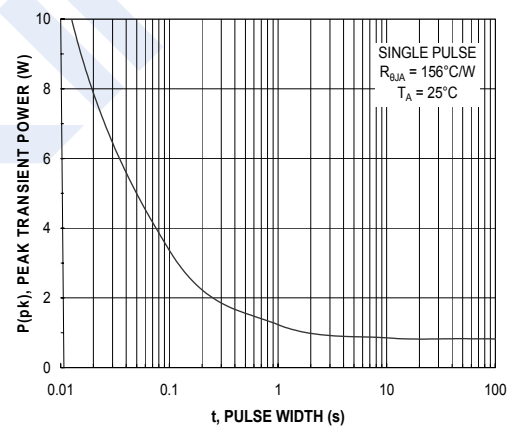


Figure 10. Single Pulse Maximum Power Dissipation

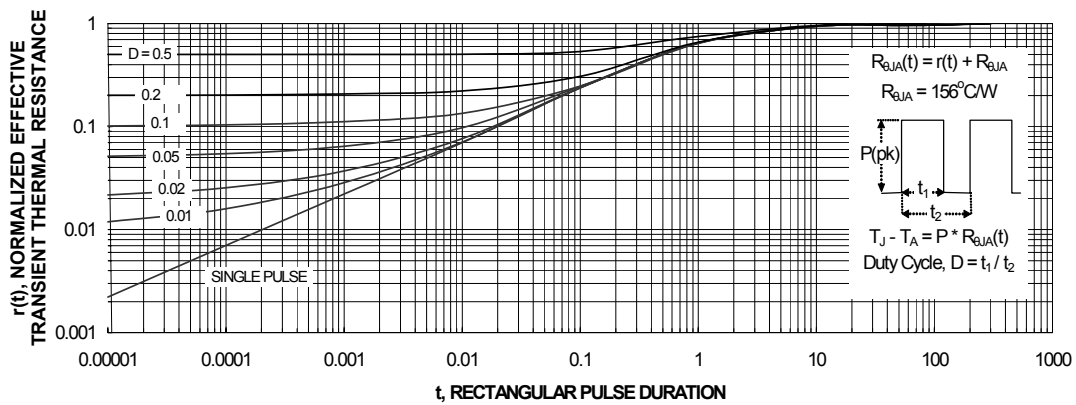


Figure 11. Transient Thermal Response Curve
Thermal characterization performed using the conditions described in Note 1b.
Transient thermal response will change depending on the circuit board design.