

Features

- High Speed Switching
- High Density Cell Design For Low $R_{DS(ON)}$
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1

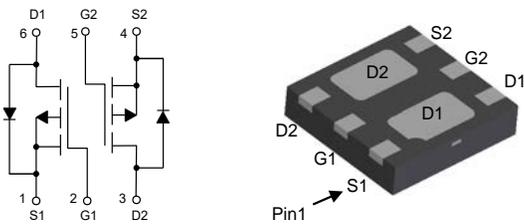
Maximum Ratings

- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range : -55°C to +150°C
- Thermal Resistance : 62.5°C/W Junction to Ambient

Parameter	Symbol	Value	
Drain-source Voltage	V_{DS}	-20V	
Gate-source Voltage	V_{GS}	±10V	
Drain Current	I_D	$T_A=25^\circ C$	-4.4A
		$T_A=70^\circ C$	-3.2A
Pulsed Drain Current ⁽¹⁾	I_{DM}	-18A	
Total Power Dissipation@ $T_A=25^\circ C$	P_D	2W	

Note :1. Pulse Test: Pulse Width≤300us,Duty cycle ≤2%.

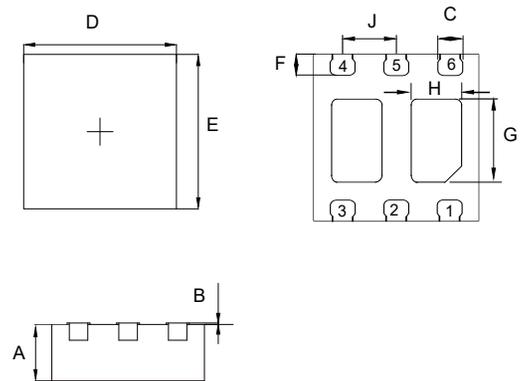
Circuit and Pin Schematic



Marking: 2301C

**Dual
P-Channel Mosfet**

DFN2020-6LA



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.016	0.024	0.400	0.600	
B	0.000	0.002	0.000	0.050	
C	0.039	0.014	0.250	0.350	
D	0.075	0.083	1.900	2.100	
E	0.075	0.083	1.900	2.100	
F	0.006	0.014	0.150	0.350	
G	0.035	0.043	0.890	1.090	
H	0.019	0.027	0.490	0.690	
J	0.026 BSC.		0.650 BSC.		

ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Static Parameter						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-20V			V
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.4	-0.7	-1.0	V
Gate-Body Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-20V, V_{GS}=0V$			-1	μA
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-4.5V, I_D=-2.9A$		49	64	m Ω
		$V_{GS}=-2.5V, I_D=-2.9A$		59	80	
		$V_{GS}=-1.8V, I_D=-2.9A$		79	95	
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=-4.4A$		-0.8	-1.2	V
Dynamic Parameters						
Input Capacitance	C_{iss}	$V_{DS}=-10V, V_{GS}=0V_{dc}, f=1MHz$		478		pF
Output Capacitance	C_{oss}			81		
Reverse Transfer Capacitance	C_{rss}			51		
Switching Parameters						
Total Gate Charge	Qg	$V_{GS}=-4.5V, V_{DS}=-10V, I_D=-4.4A$		4.3		nC
Gate Source Charge	Qgs			0.8		
Gate Drain Charge	Qgd			1.1		
Turn-on Delay Time	$t_{d(on)}$	$V_{GS}=-4.5V, V_{DD}=-10V, I_D=-1A,$ $R_{GEN}=2.5\Omega$		12		ns
Turn-on Rise Time	tr			54		
Turn-off Delay Time	$t_{d(off)}$			15		
Turn-off Fall Time	t_f			9		

Curve Characteristics

Fig. 1 - Output Characteristics

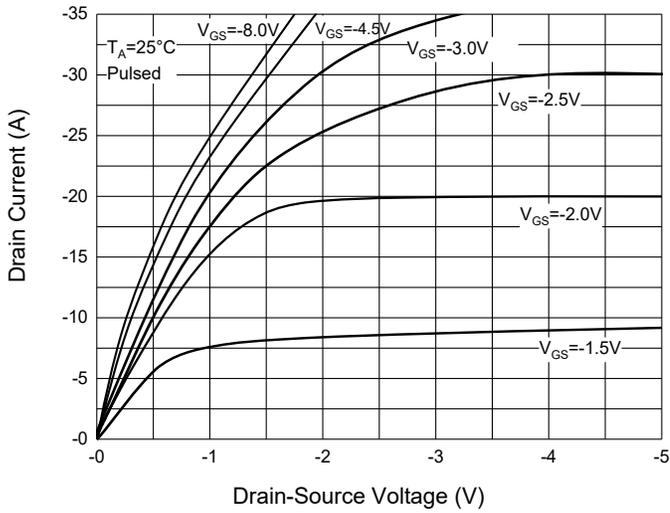


Fig. 2 - Transfer Characteristics

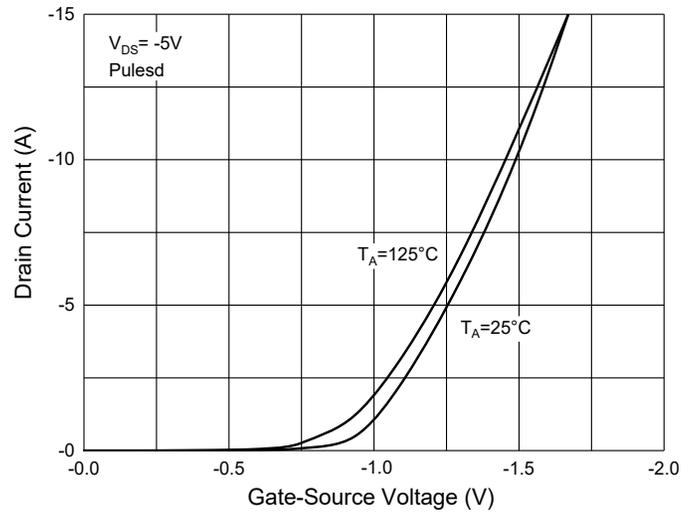


Fig. 3 - Capacitance Characteristics

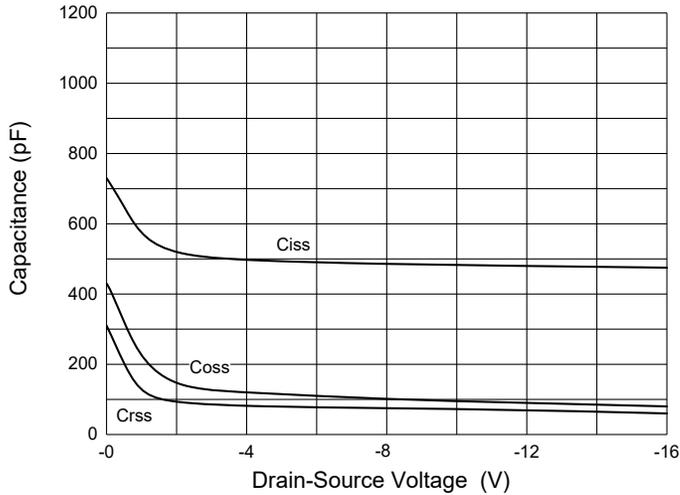


Fig. 4 - Gate Charge

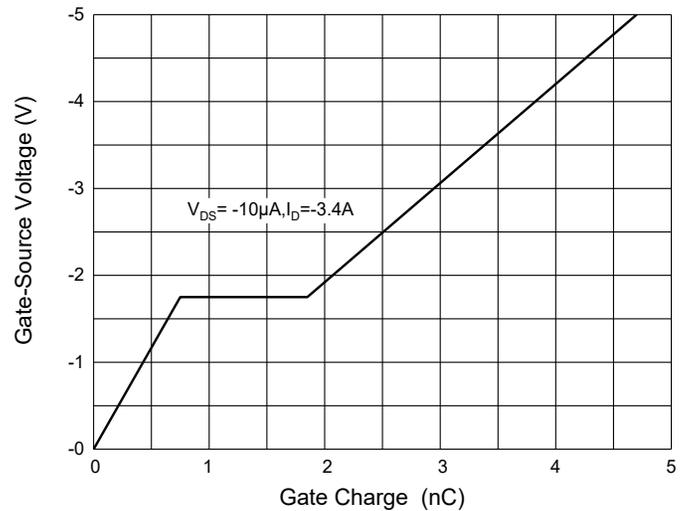
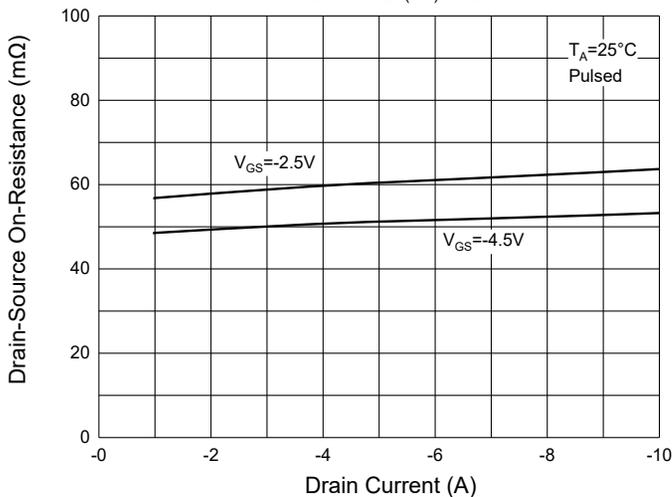


Fig. 5 - $R_{DS(ON)} - I_D$



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:3Kpcs/Reel

Note : Adding "-HF" Suffix For Halogen Free, eg. Part Number-TP-HF

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