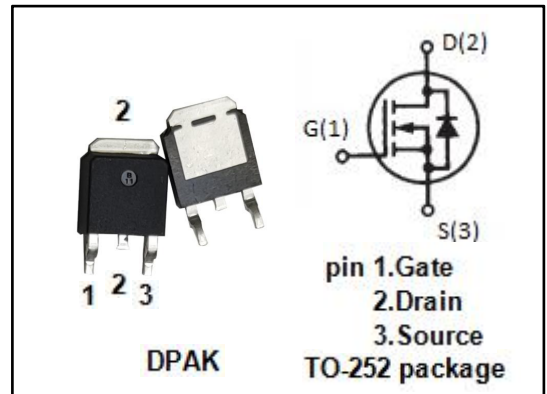


isc N-Channel MOSFET Transistor
ISCD3NK80Z
FEATURES

- Drain Current : $I_D = 2.5A @ T_C = 25^\circ C$
- Drain Source Voltage
: $V_{DSS} = 800V(\text{Min})$
- Static Drain-Source On-Resistance
: $R_{DS(on)} = 4.5 \Omega (\text{Max})$
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

DESCRIPTION

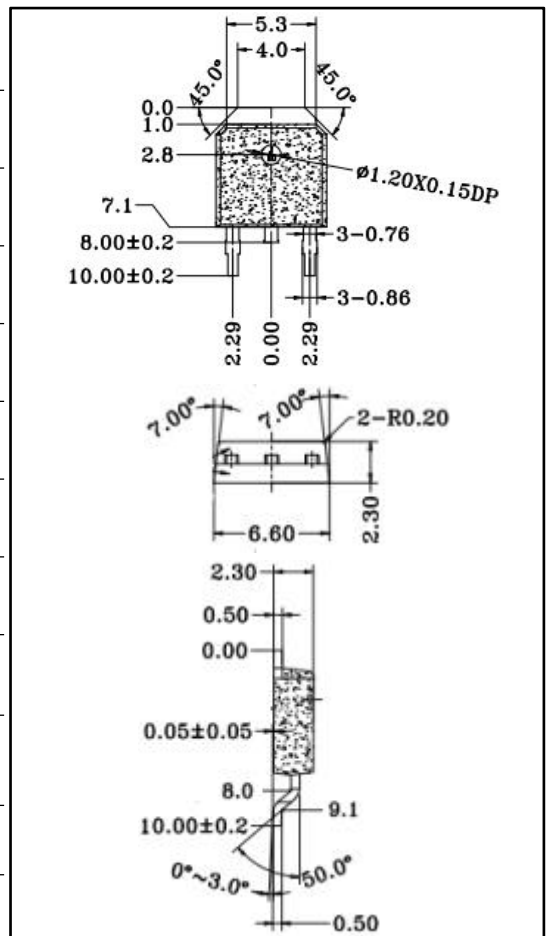
- motor drive, DC-DC converter, power switch and solenoid drive.


ABSOLUTE MAXIMUM RATINGS($T_a = 25^\circ C$)

SYMBOL	PARAMETER	VALUE	UNIT
V_{DSS}	Drain-Source Voltage	800	V
V_{GS}	Gate-Source Voltage-Continuous	± 30	V
I_D	Drain Current-Continuous	2.5	A
I_{DM}	Drain Current-Single Pulse	10	A
P_D	Total Dissipation @ $T_C = 25^\circ C$	70	W
T_J	Max. Operating Junction Temperature	-55~150	$^\circ C$
T_{stg}	Storage Temperature	-55~150	$^\circ C$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.78	$^\circ C/W$



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ELECTRICAL CHARACTERISTICS
T_C=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYPE	MAX	UNIT
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} = 0; I _D = 0.25mA	800	--	--	V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = 10V; I _D = 0.25mA	3.0	--	4.5	V
R _{DS(on)}	Drain-Source On-Resistance	V _{GS} = 10V; I _D = 1.25A	--	--	4.5	Ω
I _{GSS}	Gate-Body Leakage Current	V _{GS} = ±30V; V _{DS} = 0	--	--	±10	uA
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = 800V; V _{GS} = 0	--	--	1.0	uA
V _{SD}	Forward On-Voltage	I _S = 2A; V _{GS} = 0	--	--	1.6	V
C _{iss}	Input Capacitance	V _{GS} = 0V, V _{DS} = 25V, f = 1.0MHz	--	575	--	pF
C _{oss}	Output Capacitance		--	61	--	
C _{rss}	Reverse Transfer Capacitance		--	10	--	
Q _g	Total Gate Charge	V _{DD} = 640V, I _D = 4A, V _{GS} = 10V	-	24	--	nC
Q _{gs}	Gate-Source Charge		-	3		
Q _{gd}	Gate-Drain Charge		-	13		
t _{d(on)}	Turn-on Delay Time	V _{DD} = 400V, I _D = 4A, R _G = 25Ω	-	36		ns
t _r	Turn-on Rise Time		-	16		
t _{d(off)}	Turn-off Delay Time		-	111		
t _f	Turn-off Fall Time		-	32		

isc N-Channel MOSFET Transistor

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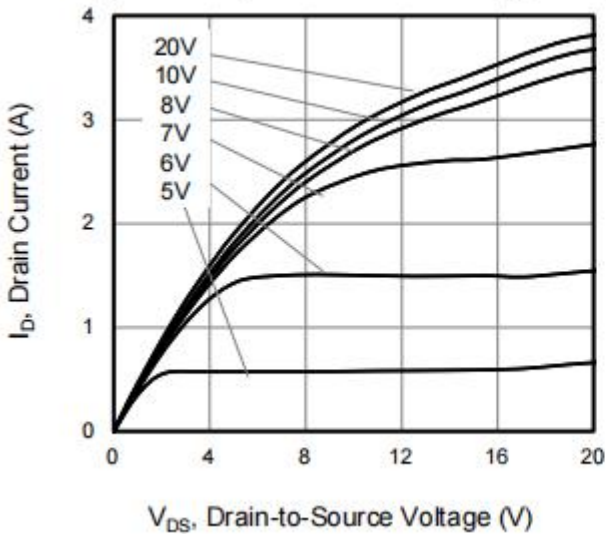
 Figure 1. Output Characteristics ($T_J = 25^\circ\text{C}$)


Figure 2. Body Diode Forward Voltage

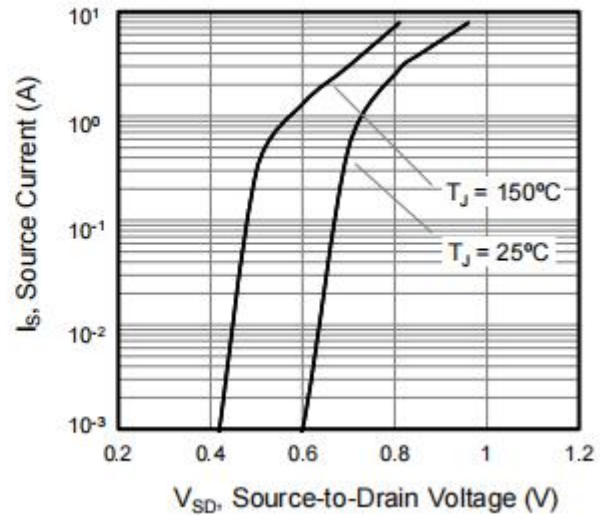


Figure 3. Drain Current vs. Temperature

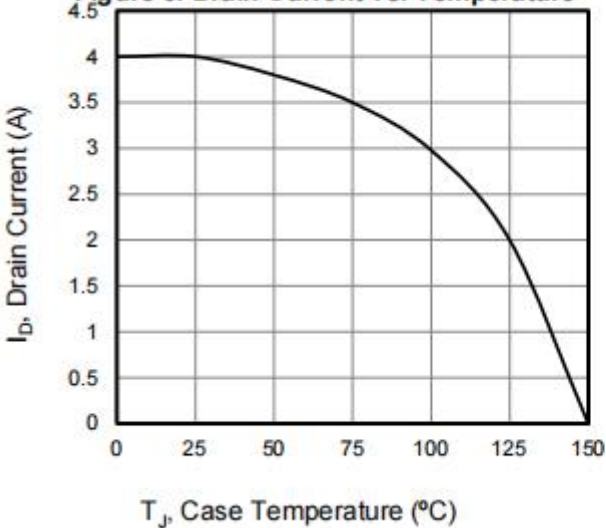
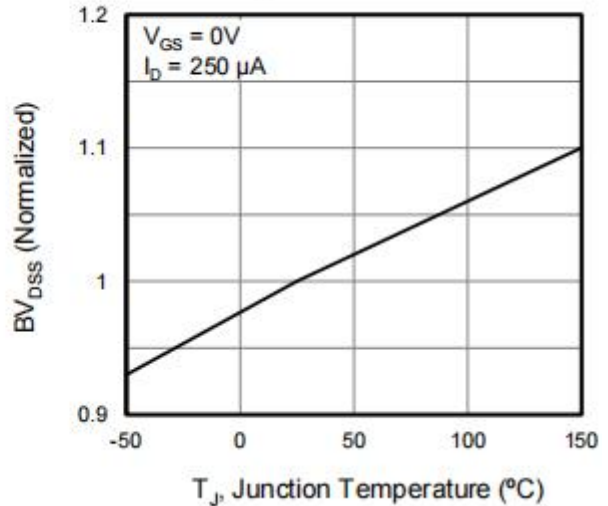

 Figure 4. BV_{DSS} Variation vs. Temperature


Figure 5. Transfer Characteristics

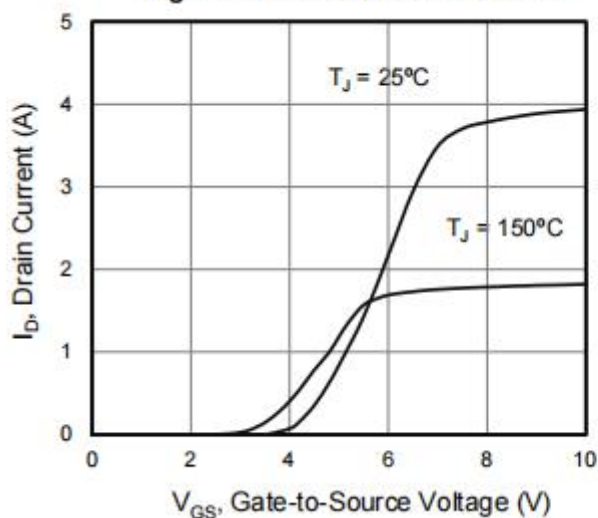
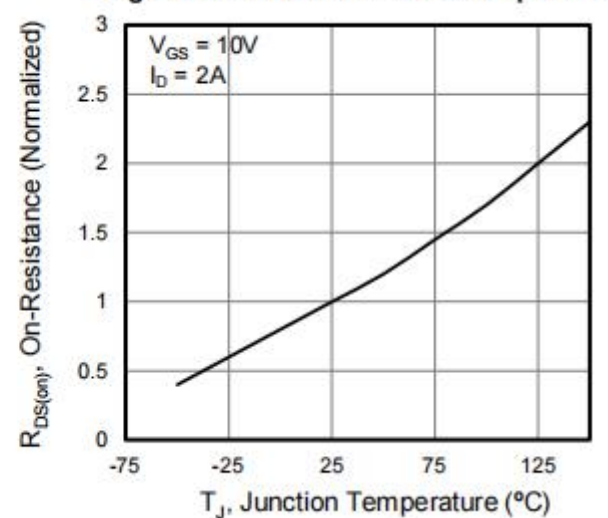


Figure 6. On-Resistance vs. Temperature



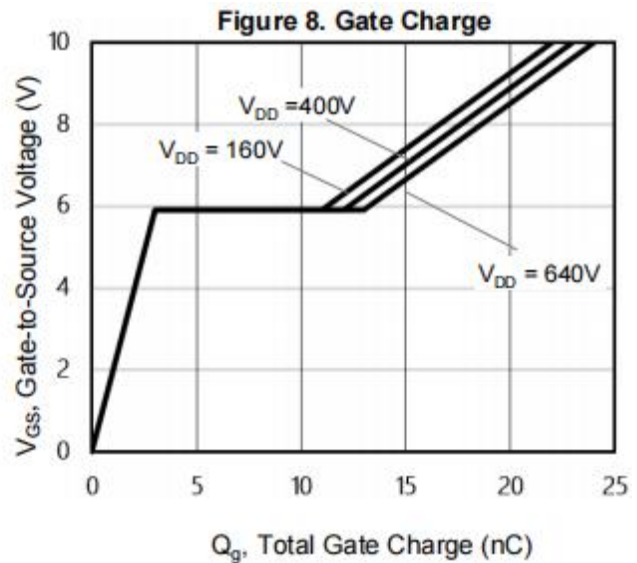
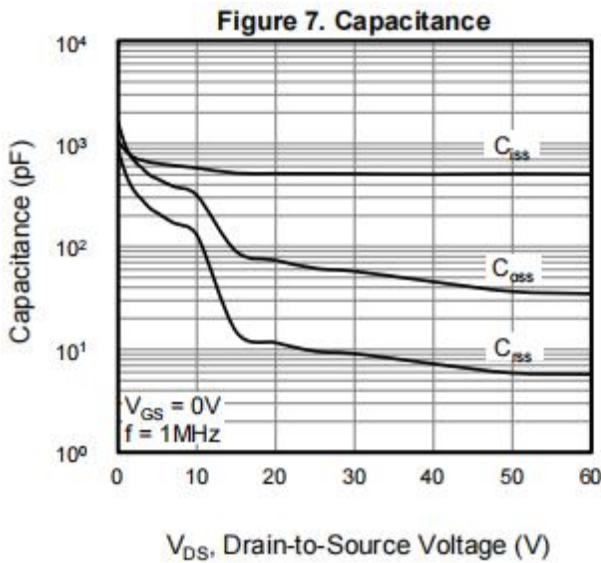
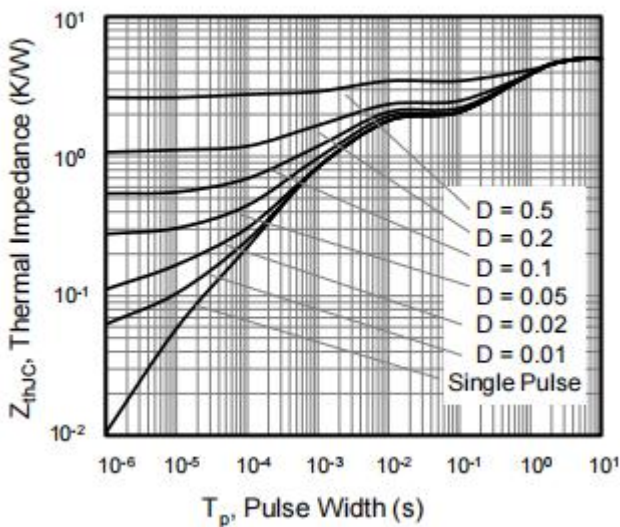


Figure 9. Transient Thermal Impedance



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