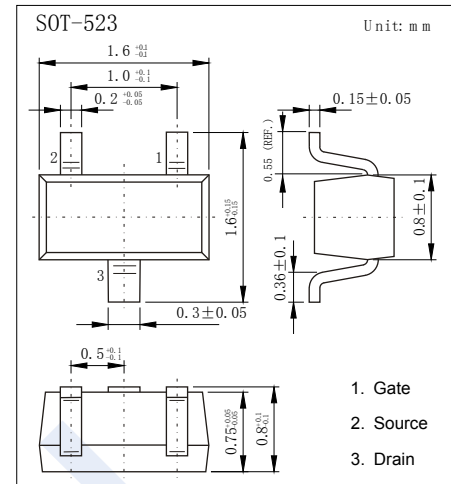
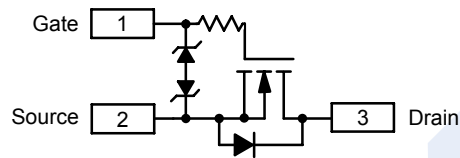


N-Channel MOSFET

KI502DT

■ Features

- $V_{DS} (V) = 20V$
- $I_D = 0.5 A (V_{GS} = 10V)$
- $R_{DS(ON)} < 700m\Omega (V_{GS} = 4.5V)$
- $R_{DS(ON)} < 850m\Omega (V_{GS} = 2.5V)$
- $R_{DS(ON)} < 1.25\Omega (V_{GS} = 1.8V)$
- Gate-Source ESD Protected: 2000 V



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

Parameter	Symbol	5 Secs	Steady State	Unit	
Drain-Source Voltage	V_{DS}	20		V	
Gate-Source Voltage	V_{GS}	± 6			
Gate-Source ESD Rating	ESD	2000			
Continuous Drain Current	I_D	$T_A=25^\circ C$	600	500	mA
		$T_A=85^\circ C$	400	350	
Pulsed Drain Current	I_{DM}	1		A	
Power Dissipation	P_D	$T_A=25^\circ C$	175	150	mW
		$T_A=85^\circ C$	90	80	
Junction Temperature	T_J	150		$^\circ C$	
Storage Temperature Range	T_{stg}	-55 to 150			

N-Channel MOSFET

KI502DT

■ 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	20			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =20V, V _{GS} =0V			0.1	μA
		V _{DS} =20V, V _{GS} =0V, T _J =85°C			5	
Gate-Body Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±4.5V			±1	
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250 μA	0.45		0.9	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =4.5V, I _D =600mA (Note.1)			700	mΩ
		V _{GS} =2.5V, I _D =500mA (Note.1)			850	
		V _{GS} =1.8V, I _D =350mA (Note.1)			1250	
On State Drain Current	I _{D(on)}	V _{GS} =4.5V, V _{DS} =5V (Note.1)	700			mA
Forward Transconductance	g _{FS}	V _{DS} =10V, I _D =400mA (Note.1)		1		S
Total Gate Charge	Q _g	V _{GS} =4.5V, V _{DS} =10V, I _D =250mA		750		pC
Gate Source Charge	Q _{gs}			75		
Gate Drain Charge	Q _{gd}			225		
Turn-On DelayTime	t _{d(on)}	I _D =200mA V _{GS} =4.5V, V _{DS} =10V, R _L =47Ω, R _G =10Ω		5		ns
Turn-On Rise Time	t _r			5		
Turn-Off DelayTime	t _{d(off)}			25		
Turn-Off Fall Time	t _f			11		
Maximum Body-Diode Continuous Current	I _S				250	mA
Diode Forward Voltage	V _{SD}	I _S =150mA, V _{GS} =0V (Note.1)			1.2	V

Note.1:Pulse test; pulse width ≤ 300 us, duty cycle ≤ 2%.

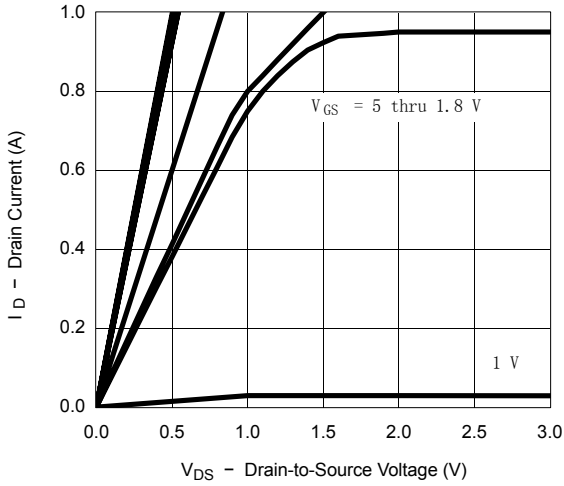
■ Marking

Marking	A*
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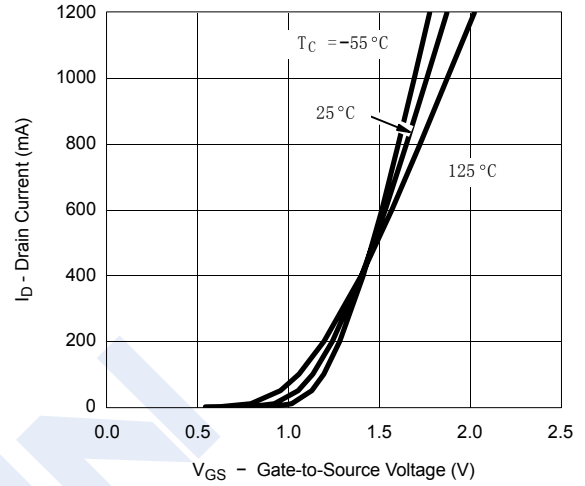
N-Channel MOSFET KI502DT

Typical Characteristics

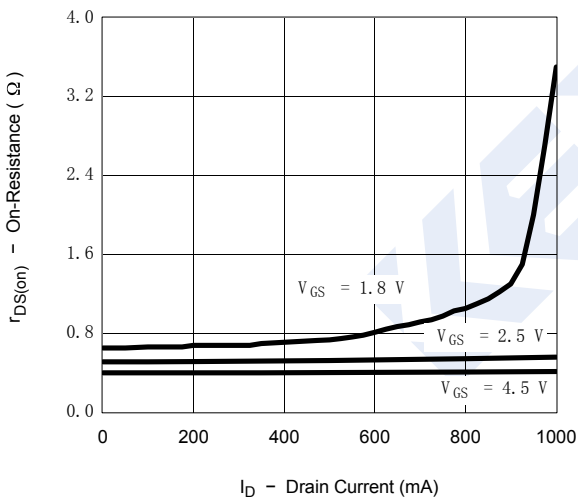
Output Characteristics



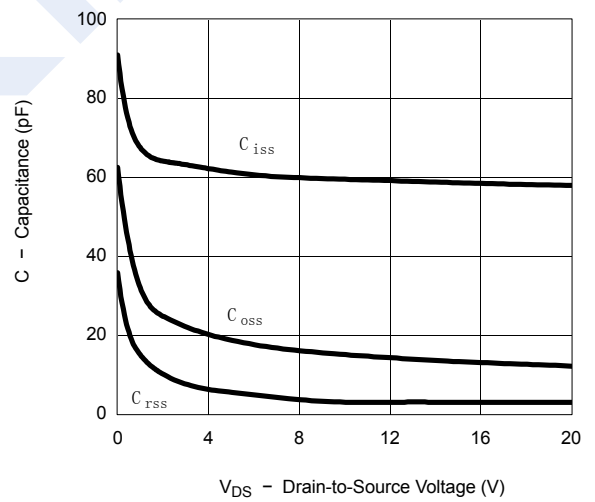
Transfer Characteristics



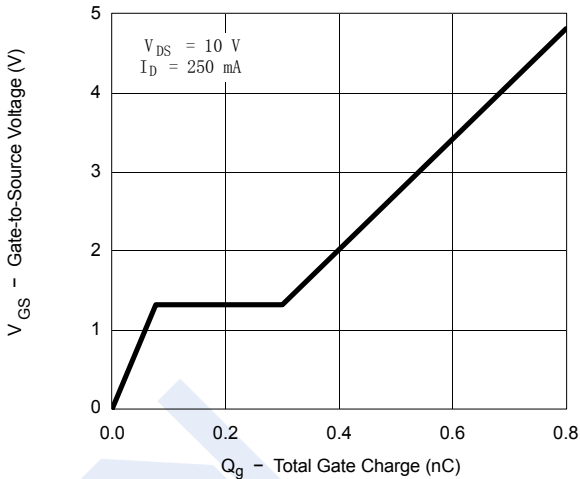
On-Resistance vs. Drain Current



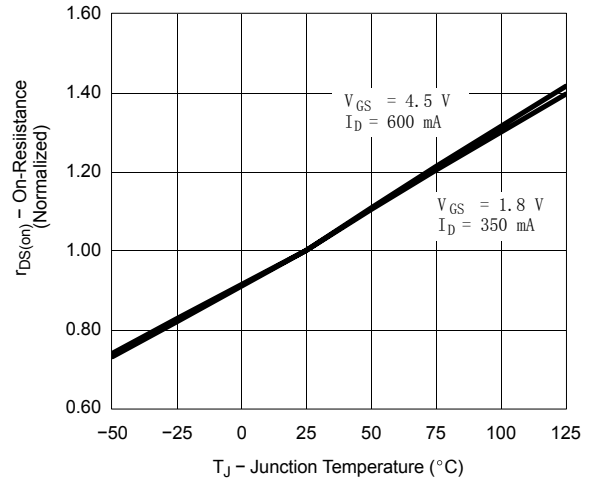
Capacitance



Gate Charge



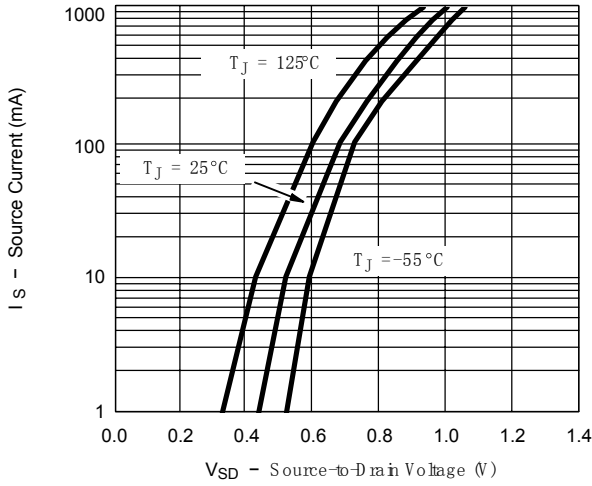
On-Resistance vs. Junction Temperature



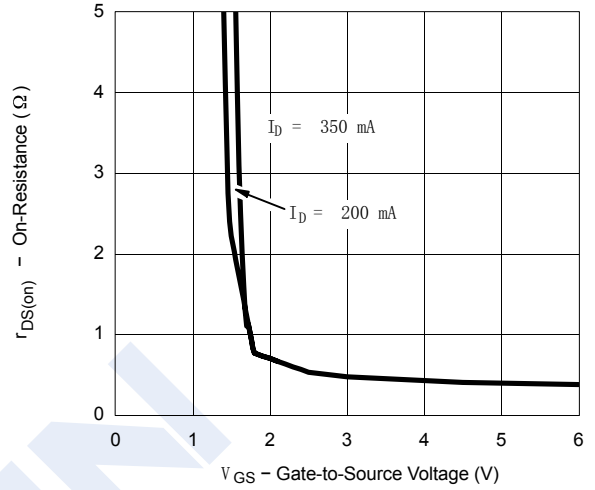
N-Channel MOSFET KI502DT

■ Typical Characteristics

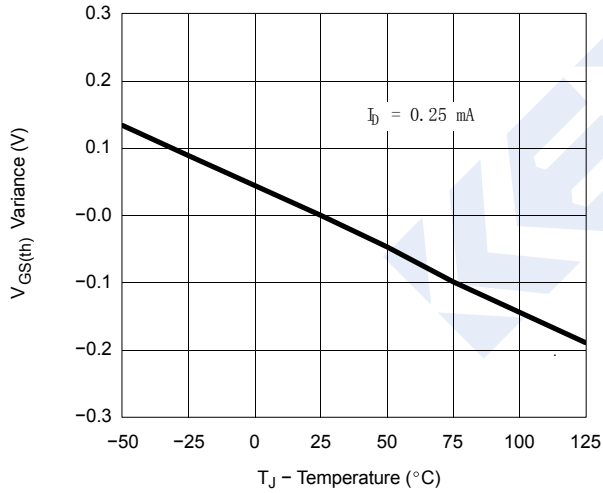
Source-Drain Diode Forward Voltage



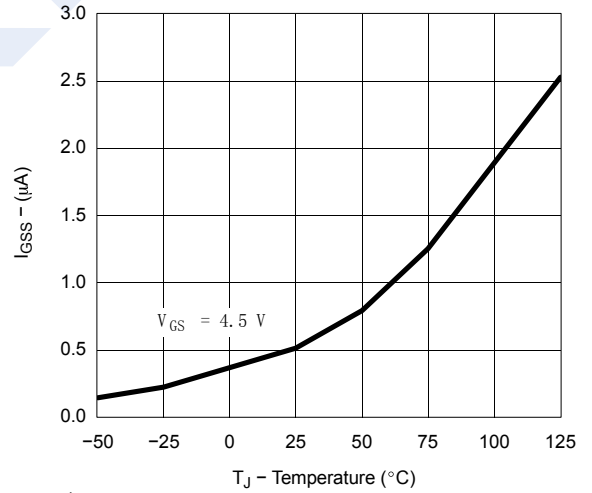
On-Resistance vs. Gate-to-Source Voltage



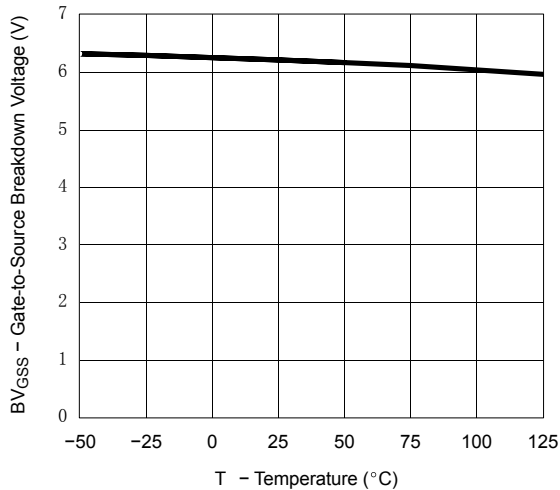
Threshold Voltage Variance vs. Temperature



IGSS vs. Temperature



BVGSS vs. Temperature



N-Channel MOSFET KI502DT

■ Typical Characteristics

