

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

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=10\mu A$	20			V
Gate-Threshold Voltage ^(Note 4)	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.65		1.2	V
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 8V, V_{DS}=0V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=20V, V_{GS}=0V$			1	μA
Drain-Source On-Resistance ^(Note 4)	$R_{DS(on)}$	$V_{GS}=4.5V, I_D=3.6A$		55	72	m Ω
		$V_{GS}=2.5V, I_D=3.1A$		82	110	
Forward Transconductance ^(Note 4)	g_{FS}	$V_{DS}=5V, I_D=3.6A$		8.5		S
Dynamic Characteristics^(Note 5)						
Input Capacitance	C_{iss}	$V_{DS}=10V, V_{GS}=0V, f=1MHz$		237		pF
Output Capacitance	C_{oss}			120		
Reverse Transfer Capacitance	C_{rss}			45		
Switching Characteristics^(Note 5)						
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=10V, V_{GS}=4.5V, I_D=3.6A, R_{GEN}=6\Omega$		23	45	ns
Turn-On Rise Time	t_r			11	30	
Turn-Off Delay Time	$t_{d(off)}$			34	70	
Turn-Off Fall Time	t_f			36	70	
Total Gate Charge	Q_g	$V_{DS}=10V, V_{GS}=4.5V, I_D=3.6A$		6	10	nC
Gate-Source Charge	Q_{gs}			1.4		
Gate-Drain Charge	Q_{gd}			1.8		
Drain-Source Diode Characteristics and Maximum Ratings						
Diode Forward Voltage ^(Note3)	V_{SD}	$V_{GS}=0V, I_S=0.94A$			1.2	V
Drain-Source Diode Forward Current ^(Note2)	I_S				0.94	A

Notes:

2. Repetitive Rating : Pulse Width limited By Maximum Junction Temperature.
3. Surface Mounted on FR4 Board, t < 10 sec.
4. Pulse Test : Pulse Width < 300 μs , Duty Cycle < 2%.
5. Guaranteed By Design, Not Subject to Production Testing.

Curve Characteristics

Fig. 1 - Output Characteristics

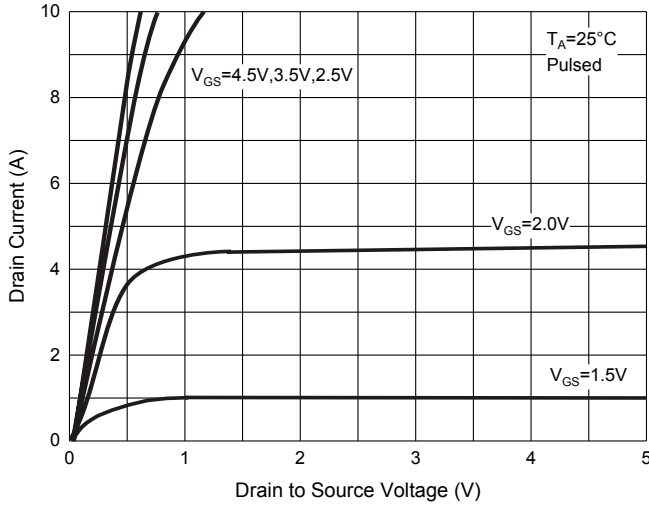


Fig. 2 - Transfer Characteristics

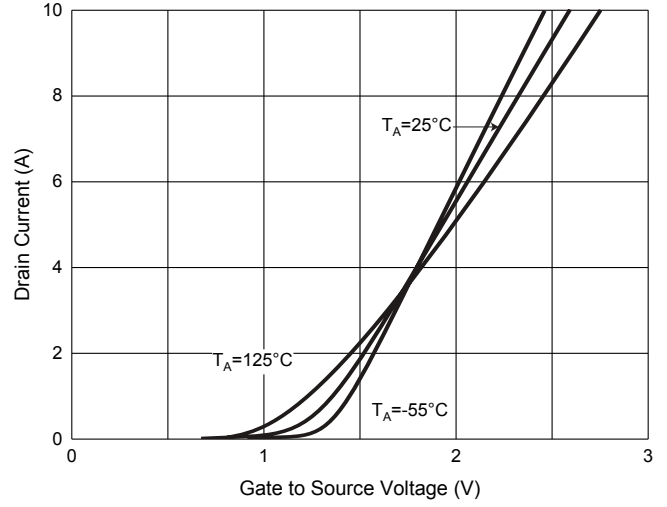


Fig. 3 - Capacitance Characteristics

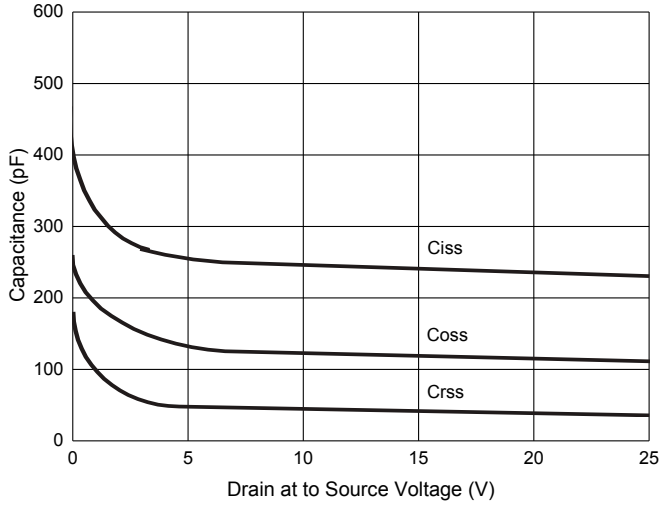


Fig. 4 - $R_{DS(ON)}$ —Temperature

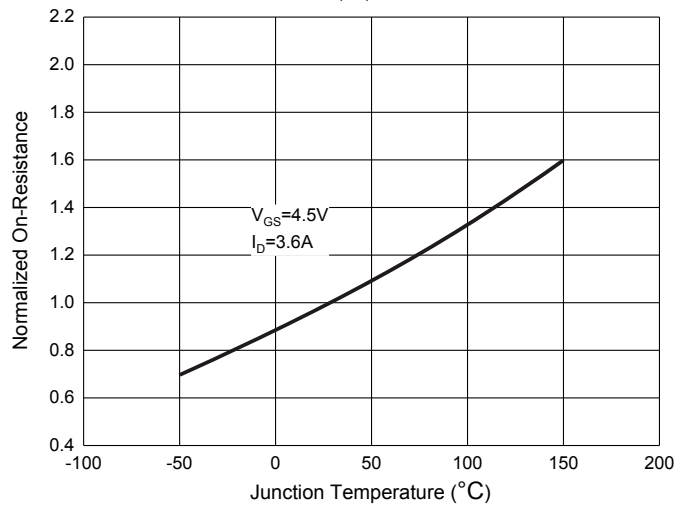


Fig. 5 - Threshold Voltage

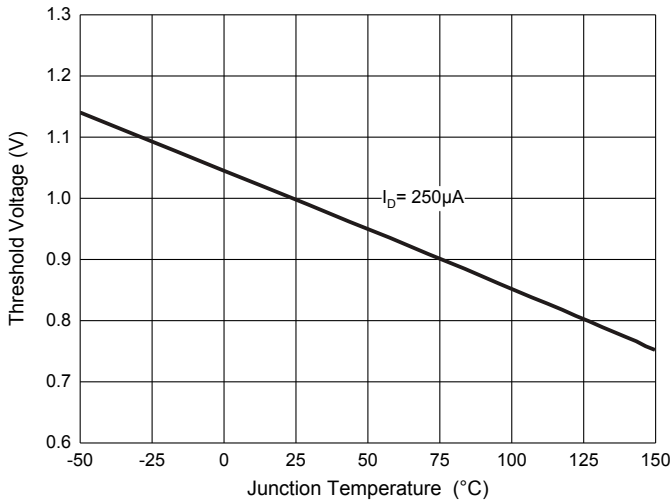
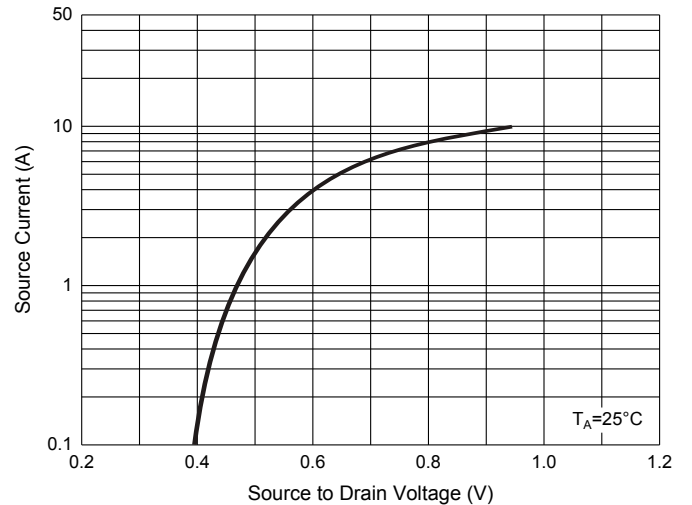


Fig. 6 - I_S — V_{SD}



Ordering Information

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

IMPORTANT NOTICE

Micro Commercial Components Corp. reserves the right to make changes without further notice to any product herein to make corrections, modifications , enhancements , improvements , or other changes . **Micro Commercial Components Corp.** does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights ,nor the rights of others . The user of products in such applications shall assume all risks of such use and will agree to hold **Micro Commercial Components Corp.** and all the companies whose products are represented on our website, harmless against all damages. **Micro Commercial Components Corp.** products are sold subject to the general terms and conditions of commercial sale, as published at <https://www.mccsemi.com/Home/TermsAndConditions>.

LIFE SUPPORT

MCC's products are not authorized for use as critical components in life support devices or systems without the express written approval of Micro Commercial Components Corporation.

CUSTOMER AWARENESS

Counterfeiting of semiconductor parts is a growing problem in the industry. Micro Commercial Components (MCC) is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. MCC strongly encourages customers to purchase MCC parts either directly from MCC or from Authorized MCC Distributors who are listed by country on our web page cited below. Products customers buy either from MCC directly or from Authorized MCC Distributors are genuine parts, have full traceability, meet MCC's quality standards for handling and storage. **MCC will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources.** MCC is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Micro Commercial Components \(MCC\):](#)

[SI2302A-TP](#)