



## Features

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Low RDS(on) Improving System Efficiency
- ESD Protected Gate
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Halogen free available upon request by adding suffix "-HF"

## Mechanical Data

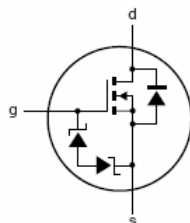
- Case: SOT-523, Molded Plastic
- Terminal Connections: See Diagram

## Maximum Ratings

- Operating Temperature: -55°C to +150°C
- Storage Temperature: -55°C to +150°C

Parameter	Symbol	Value	Unit
Drain-Source-Voltage	$V_{DSS}$	20	V
Gate-Source-Voltage	$V_{GSS}$	±6	V
Continuous Drain Current	$I_D$	0.915	A
Thermal Resistance, Junction-to-Ambient	$R_{thJA}$	833	°C/W
Total Power Dissipation	$P_D$	150	mW

Equivalent circuit

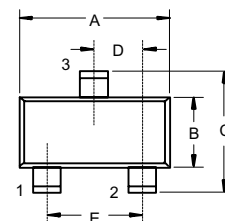


Marking: X / 34K

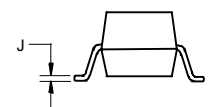
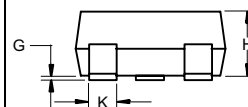
# SI4153

## N-Channel Plastic-Encapsulate Transistor

## SOT-523

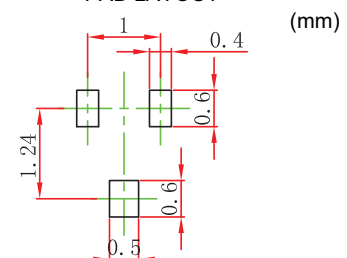


1.GATE  
2.SOURCE  
3.DRAIN



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.059	.067	1.50	1.70	
B	.030	.033	0.75	0.85	
C	.057	.069	1.45	1.75	
D	.020 Nominal		0.50Nominal		
E	.035	.043	0.90	1.10	
G	.000	.004	.000	.100	
H	.028	.031	.70	0.80	
J	.004	.008	.100	.200	
K	.010	.014	.25	.35	

SUGGESTED SOLDER  
PAD LAYOUT



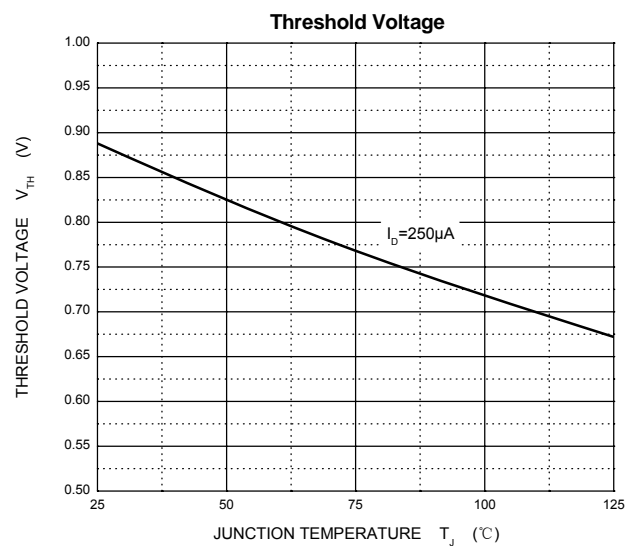
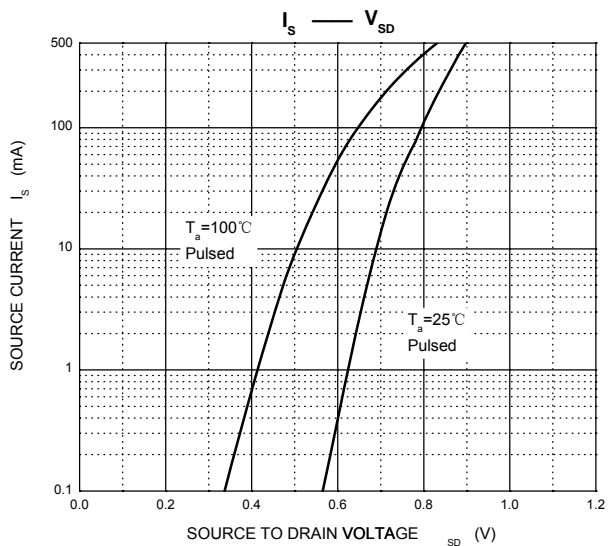
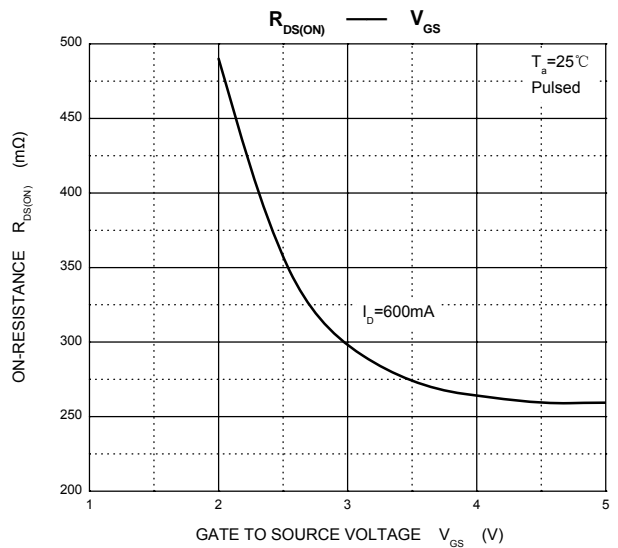
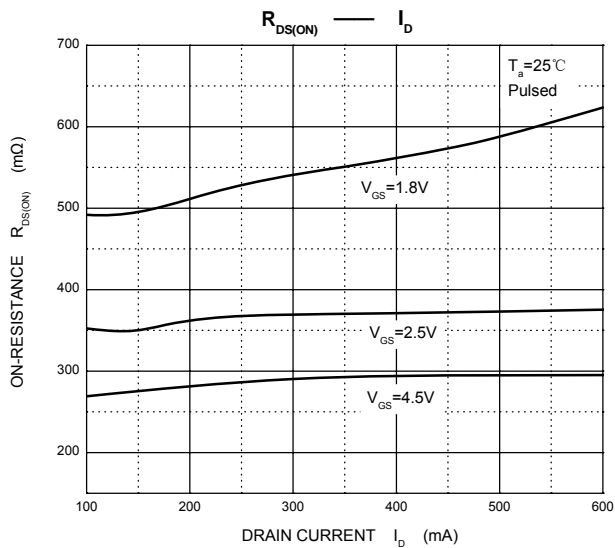
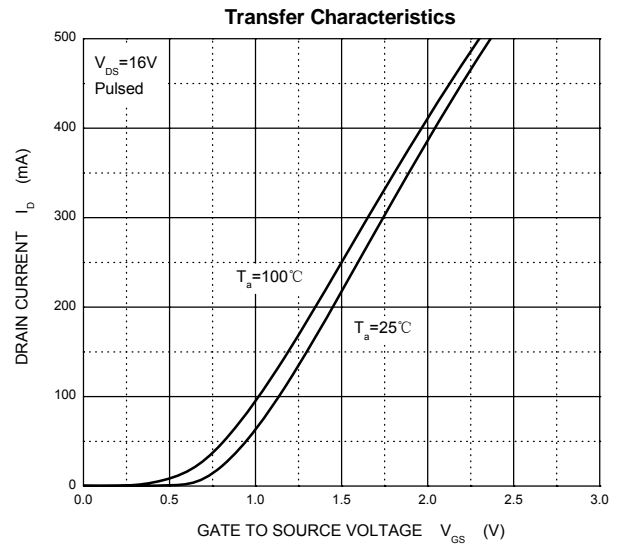
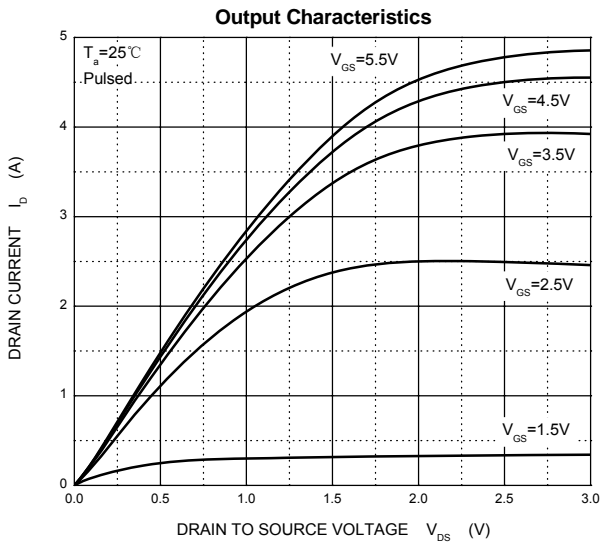
**MOSFET ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)**

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	20			V
Gate-source leakage	$I_{GSS}$	$V_{DS} = 0V, V_{GS} = \pm 4.5V$			$\pm 1$	$\mu A$
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = 16V, V_{GS} = 0V$			100	nA
ON CHARACTERISTICS (note 2)						
Gate-source threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.45		1.1	V
Drain-source on-state resistance	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 600mA$			570	m $\Omega$
		$V_{GS} = 2.5V, I_D = 500mA$			620	
		$V_{GS} = 1.8V, I_D = 350mA$			700	
		$V_{GS} = 1.5V, I_D = 40mA$			950	
Forward transconductance	$g_{fs}$	$V_{DS} = 10V, I_D = 400mA$	0.5			S
CHARGES AND CAPACITANCES (note 3)						
Input Capacitance	$C_{iss}$	$V_{DS} = 16V, V_{GS} = 0V, f = 1MHz$		110		pF
Output Capacitance	$C_{oss}$			16		
Reverse Transfer Capacitance	$C_{rss}$			12		
Total Gate Charge	$Q_g$	$V_{DS} = 10V, V_{GS} = 4.5V, I_D = 200mA$		1.82		nC
Gate-Source Charge	$Q_{gs}$			0.3		
Gate-Drain Charge	$Q_{gd}$			0.42		
SWITCHING CHARACTERISTICS (note 3,4)						
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 10V, V_{GS} = 4.5V$ $R_G = 10\Omega, I_D = 200mA$		3.7		ns
Rise time	$t_r$			4.4		
Turn-off delay time	$t_{d(off)}$			25		
Fall time	$t_f$			7.6		
DRAIN-SOURCE DIODE CHARACTERISTICS						
Body diode voltage	$V_{SD}$	$I_S = 0.2A, V_{GS} = 0V$			1.1	V

**Notes :**

1. Surface mounted on FR4 board using 1 in sq pad size.
2. Puls Test : Pulse width  $\leq 300\mu s$ , Duty cycle  $\leq 2\%$ .
3. Guaranteed by design, not subject to production testing.
4. Switching characteristics are independent of operating junction temperatures.

# SI4153



Ordering Information :

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

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

\*\*\*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.

\*\*\*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.