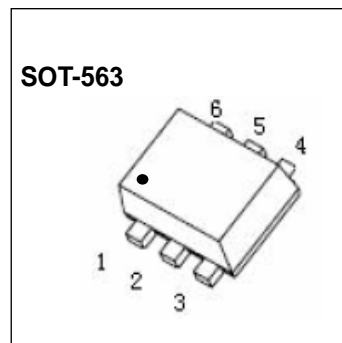


Plastic-Encapsulate MOSFETS

Dual P-Channel Power MOSFET

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
-20V	750mΩ@-4.5V	-0.66A
	11500mΩ@-2.5V	
	2600mΩ(TYP)@-1.8V	



GENERAL DESCRIPTION

This Dual P-Channel MOSFET has been designed using advanced Power Trench process to optimize the $R_{DS(ON)}$.

Including two P-ch CB3139K MOSFET (independently) in a package.

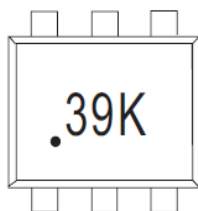
FEATURE

- High-Side Switching
- Low On-Resistance
- Low Threshold
- Fast Switching Speed

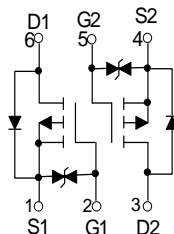
APPLICATION

- Drivers: Relays, Solenoids, Lamps, Hammers, Displays, Memories
- Battery Operated Systems
- Power Supply Converter Circuits
- Load/Power Switching Cell Phones, Pages

MARKING



Equivalent Circuit



Maximum ratings ($T_a=25^{\circ}C$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source voltage	V_{DSS}	-20	V
Typical Gate-Source Voltage	V_{GS}	±12	
Drain Current-Continuous	$I_{D(DC)}$	-0.66	A
Drain Current -Pulsed(note1)	$I_{DM(pulse)}$	-2.64	
Power Dissipation (note 2)	P_D	150	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	833	$^{\circ}C/W$
Storage Temperature	T_j	150	$^{\circ}C$
Junction Temperature	T_{stg}	-55 ~+150	



MOSFET ELECTRICAL CHARACTERISTICS

$T_a=25^\circ\text{C}$ unless otherwise specified

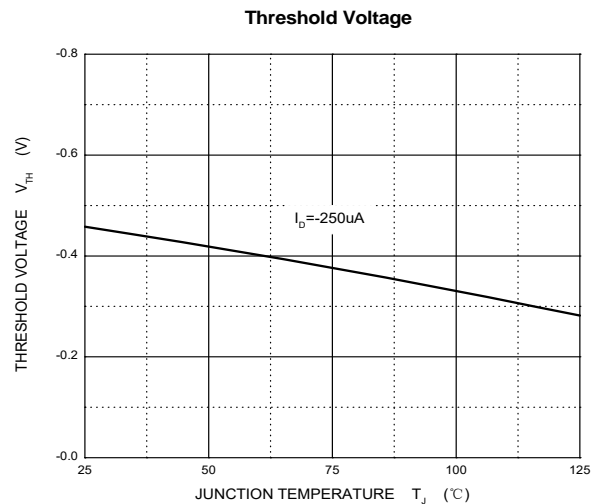
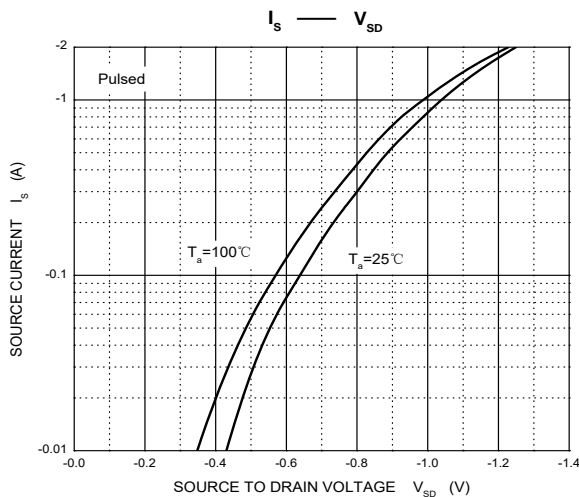
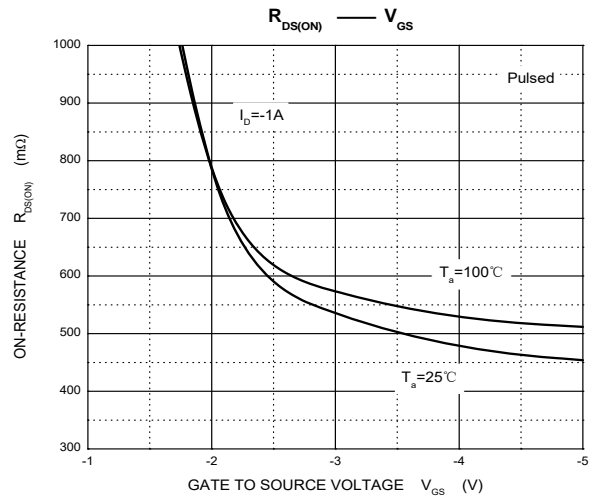
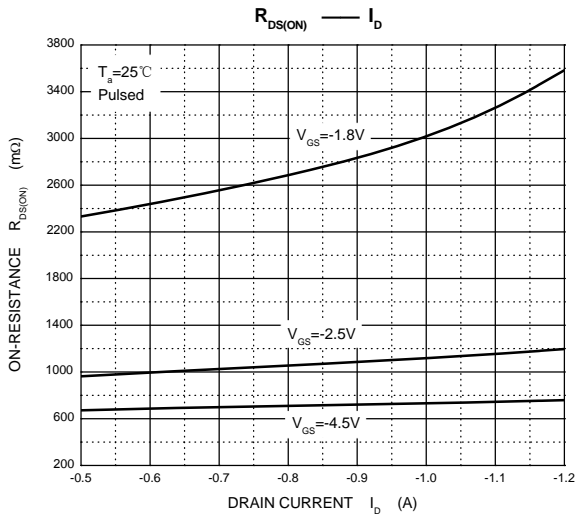
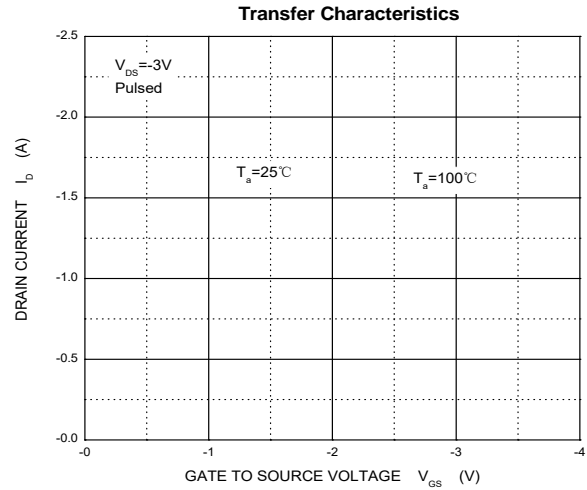
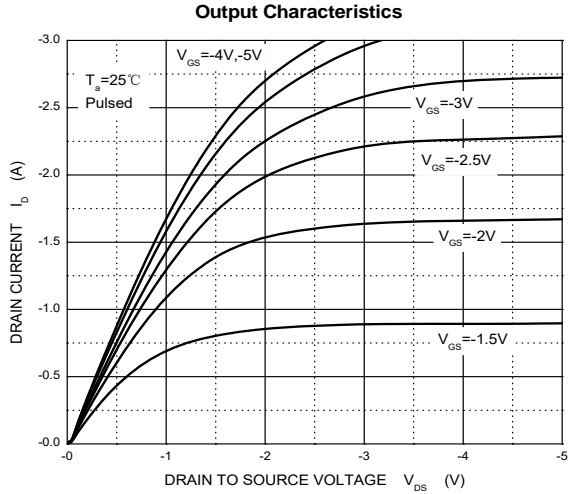
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
On/Off States						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-20			V
Gate-Threshold Voltage(note 3)	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.35		-1.1	V
Gate-Body Leakage Current	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 10V$			± 20	μA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -20V, V_{GS} = 0V$			-1	μA
Drain-Source On-State Resistance(note 3)	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -1A$			750	m Ω
		$V_{GS} = -2.5V, I_D = -800mA$			1150	
		$V_{GS} = -1.8V, I_D = -500mA$		2600		
Forward Transconductance	g_{FS}	$V_{DS} = -10V, I_D = -540mA$	0.8			S
Dynamic Characteristics(note 4)						
Input Capacitance	C_{iss}	$V_{DS} = -16V, V_{GS} = 0V, f = 1MHz$			170	pF
Output Capacitance	C_{oss}				25	
Reverse Transfer Capacitance	C_{rss}				15	
Switching Times (note 4)						
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -10V,$ $I_D = -200mA,$ $V_{GS} = -4.5V, R_G = 10\Omega$		9		ns
Rise Time	t_r			5.8		
Turn-Off Delay Time	$t_{d(off)}$			32.7		
Fall Time	t_f			20.3		
Drain-Source Diode Characteristics						
Drain-Source Diode Forward Voltage (note 3)	V_{SD}	$I_S = -0.5A, V_{GS} = 0V$			-1.2	V

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. This test is performed with no heat sink at $T_a=25^\circ\text{C}$.
3. Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 0.5\%$.
4. These parameters have no way to verify.

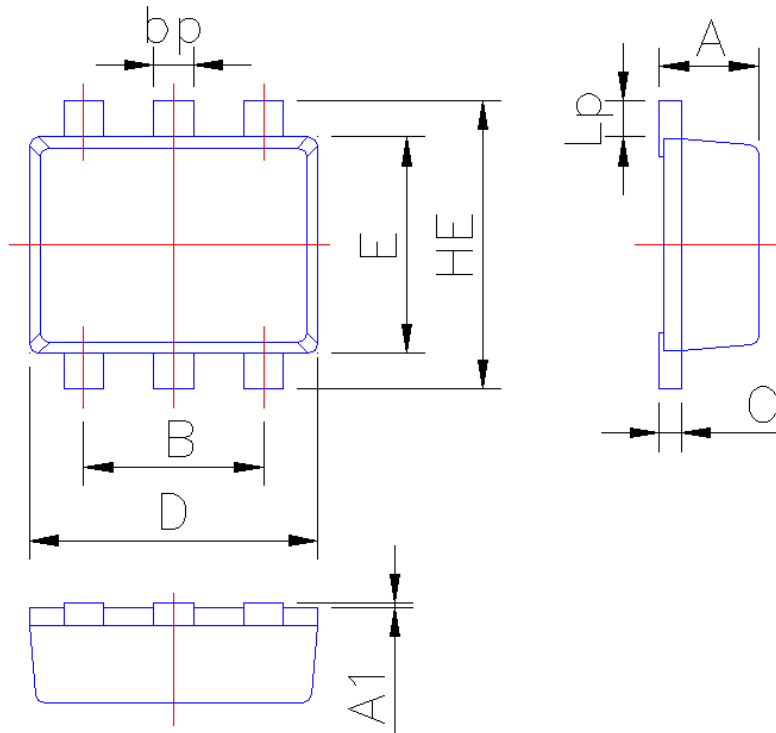


Typical Characteristics





SOT-563-Package Outline Dimensions



Symbol	Dimension in Millimeters	
	Min	Max
A	0.50	0.60
A1	0	0.05
B	0.95	1.05
bp	0.13	0.30
C	0.09	0.150
D	1.50	1.70
E	1.15	1.35
HE	1.40	1.80
Lp	0.13	0.30