



Micro Commercial Components



Micro Commercial Components  
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# SI3434

## Features

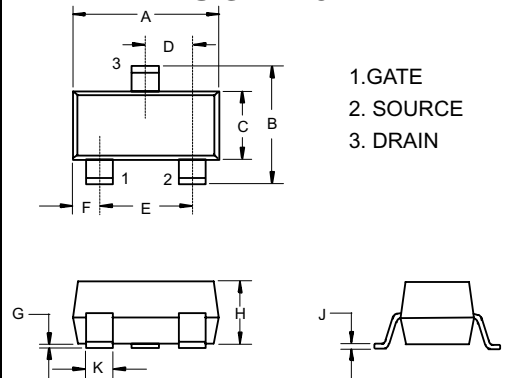
- High dense cell design for extremely low  $R_{DS(ON)}$
- Rugged and reliable
- Lead free product is acquired
- SOT-23 Package
- Marking Code: R34
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Halogen free available upon request by adding suffix "-HF"

### Maximum Ratings @ 25°C Unless Otherwise Specified

Symbol	Parameter	Rating	Unit
$V_{DS}$	Drain-source Voltage	30	V
$I_D$	Drain Current-Continuous	5.0	A
$I_{DM}$	Drain Current-Pulsed (note 1)	20	A
$V_{GS}$	Gate-source Voltage	$\pm 10$	V
$R_{\theta JA}$	Thermal Resistance Junction to Ambient (note 2)	417	$^{\circ}C/W$
$T_J$	Operating Junction Temperature	-55 to +150	$^{\circ}C$
$T_{STG}$	Storage Temperature	-55 to +150	$^{\circ}C$

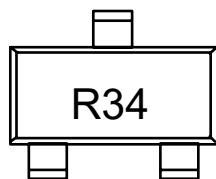
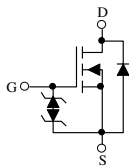
## N-Channel Enhancement Mode Field Effect Transistor

### SOT-23

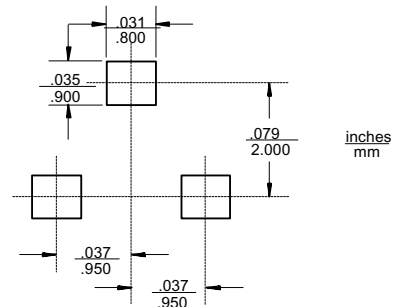


DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.110	.120	2.80	3.04	
B	.083	.104	2.10	2.64	
C	.047	.055	1.20	1.40	
D	.035	.041	.89	1.03	
E	.070	.081	1.78	2.05	
F	.018	.024	.45	.60	
G	.0005	.0039	.013	.100	
H	.035	.044	.89	1.12	
J	.003	.007	.085	.180	
K	.015	.020	.37	.51	

### Internal Structure and Marking Code



### Suggested Solder Pad Layout



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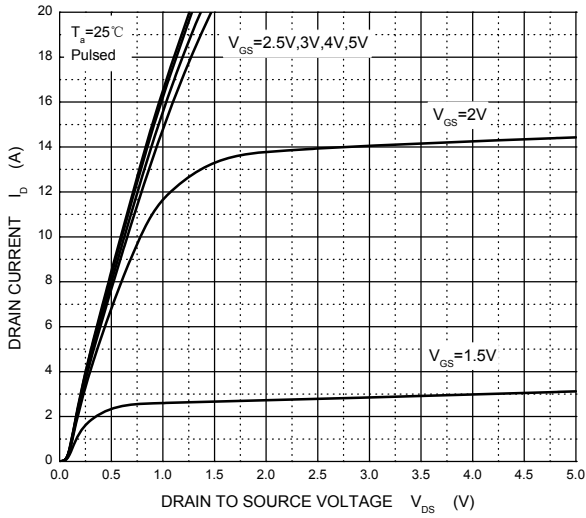
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>STATIC PARAMETERS</b>						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = 30V, V_{GS} = 0V$			1	$\mu A$
Gate-body leakage current	$I_{GSS}$	$V_{GS} = \pm 10V, V_{DS} = 0V$			$\pm 10$	$\mu A$
Gate threshold voltage(note 3)	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.6		1	V
Drain-source on-resistance (note 3)	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 5A$			42	m $\Omega$
		$V_{GS} = 4.5V, I_D = 5A$			44	m $\Omega$
		$V_{GS} = 2.5V, I_D = 4A$			50	m $\Omega$
Forward tranconductance (note 3)	$g_{FS}$	$V_{DS} = 5V, I_D = 4A$		15		S
Diode forward voltage (note 3)	$V_{SD}$	$I_S = 1A, V_{GS} = 0V$			1	V
<b>DYNAMIC PARAMETERS (note 4)</b>						
Input Capacitance	$C_{iss}$	$V_{DS} = 15V, V_{GS} = 0V, f = 1MHz$		245		pF
Output Capacitance	$C_{oss}$			35		pF
Reverse Transfer Capacitance	$C_{rss}$			20		pF
<b>SWITCHING PARAMETERS (note 4)</b>						
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 15V, V_{GS} = 10V$ $R_L = 3.75\Omega, R_{GEN} = 3\Omega$		2		ns
Turn-on rise time	$t_r$			3.5		ns
Turn-off delay time	$t_{d(off)}$			22		ns
Turn-off fall time	$t_f$			3.5		ns
Total Gate Charge	$Q_g$	$V_{DS} = 15V, V_{GS} = 10V, I_D = 4A$			10	nC
Gate-Source Charge	$Q_{gs}$			0.5		nC
Gate-Drain Charge	$Q_{gd}$			1		nC

**Note :**

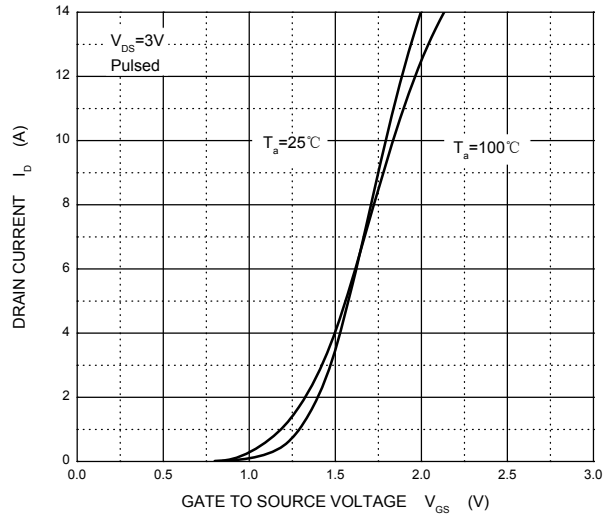
1. Repetitive Rating : Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board,  $t < 5$  sec.
3. Pulse Test : Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$ .
4. Guaranteed by design, not subject to production testing.

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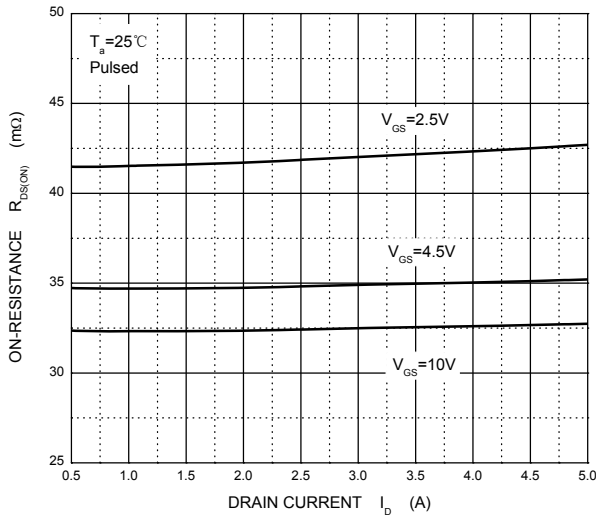
Output Characteristics



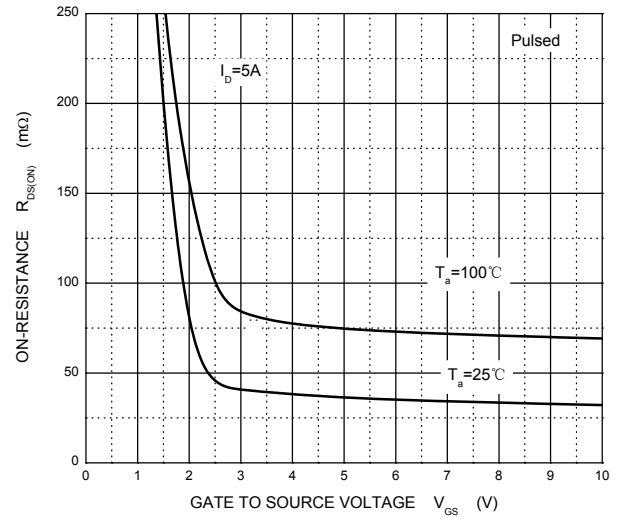
Transfer Characteristics



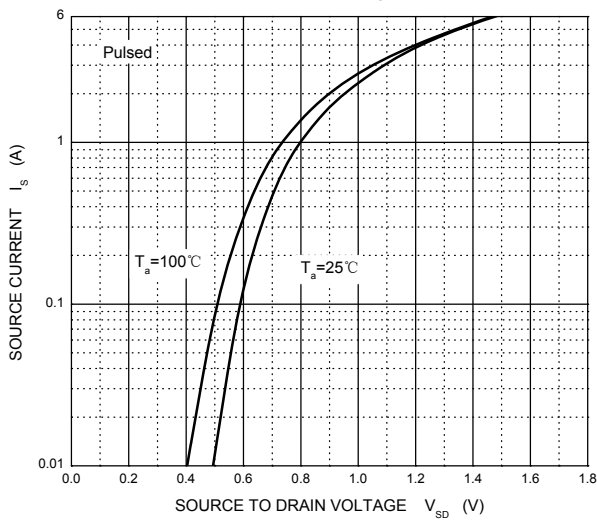
$R_{DS(ON)}$  —  $I_D$



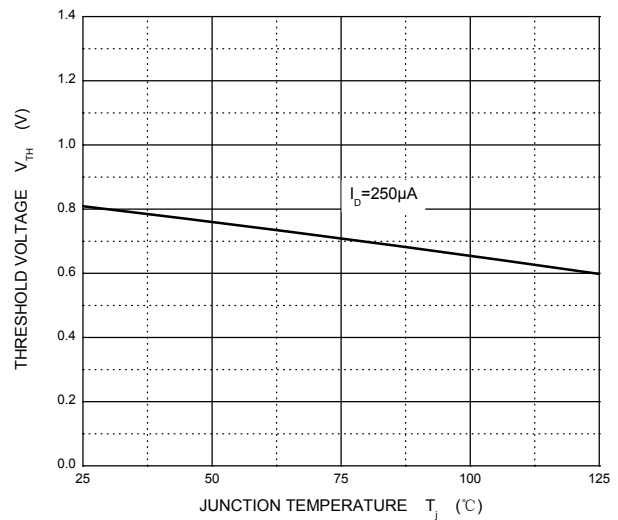
$R_{DS(ON)}$  —  $V_{GS}$



$I_S$  —  $V_{SD}$



Threshold Voltage





TM

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### Ordering Information :

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

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

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