

Description

This 30A,30V N-Channel MOSFET in a SOP-8 Plastic Package.

Features

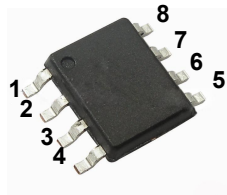
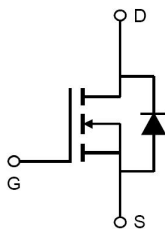
- Low $R_{DS(on)}$
- Low Gate Charge
- Optimized for fast-switching
- RoHS and Halogen-Free Compliant

Applications

Synchronous Rectification in DC/DC and AC/DC Converters, Isolated DC/DC Converters in Telecom and Industrial.

V_{DSS}	$R_{DS(on)}$ Typ	I_D
30V	4.3m Ω	30A

Equivalent Circuit & Pinning



PIN1、PIN 2、PIN 3: Source PIN 4 : Gate
PIN5、PIN 6、PIN 7、PIN 8: Drain

Absolute Maximum Ratings(Ta=25℃)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	$T_A=25^{\circ}\text{C}$	I_D	30	A
Pulsed Drain Current ^①		I_{DM}	65	A
Avalanche Current		I_{AS}	30	A
Avalanche energy		E_{AS}	70	mJ
Power Dissipation	$T_C=25^{\circ}\text{C}$	P_D	4	W
	$T_A=25^{\circ}\text{C}$		0.75	W
Thermal resistance, junction - ambient		$R_{\theta JA}$	170	°C/W
Thermal resistance, junction - case		$R_{\theta JC}$	32	°C/W
Soldering temperature, wave soldering for 10s		T_{sld}	265	°C
Operating and Junction Temperature Range		T_j T_{stg}	-55~+150	°C

Electrical Characteristics(Ta=25℃)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$	$I_D=250\mu A$	30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30V$	$V_{GS}=0V$			1.0	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20V$	$V_{DS}=0V$			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$	$I_D=250\mu A$	1.2	1.8	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$	$I_D=20A$		4.3	5.5	mΩ
		$V_{GS}=4.5V$	$I_D=12A$		5.5	7	
Forward Transconductance	g_{FS}	$V_{DS}=25V$	$I_D=10A$		30		S
Diode Forward Voltage	V_{SD}	$I_S=3A$	$V_{GS}=0V$		0.7	1.2	V

Electrical Characteristics(Ta=25℃)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		4000		pF
Output Capacitance	C_{oss}			420		
Reverse Transfer Capacitance	C_{rss}			280		
Gate resistance	R_g	$f=1.0MHz$		0.55		Ω
Total Gate Charge(10V)	$Q_{g(10V)}$	$V_{GS}=10V$ $I_D=20A$ $V_{DS}=15V$		36	49	nC
Total Gate Charge(4.5V)	$Q_{g(4.5V)}$			17	23	
Gate-Source Charge	Q_{gs}			6		
Gate-Drain Charge	Q_{gd}			8		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=15V$ $R_L=0.75\Omega$ $R_{GEN}=3.0\Omega$		7.5		ns
Turn-On Rise Time	t_r			4.0		
Turn-Off Delay Time	$t_{d(off)}$			37.0		
Turn-Off Fall Time	t_f			7.5		
Body Diode Reverse Recovery Time	t_{rr}	$I_F=20A$ $di/dt=500A/\mu s$		14		ns
Body Diode Reverse Recovery Charge	Q_{rr}			20.3		nC

 Note: ① Pulse Test : Pulse width $\leq 300\mu s$, Duty cycle $\leq 2\%$;

Electrical Characteristic Curve

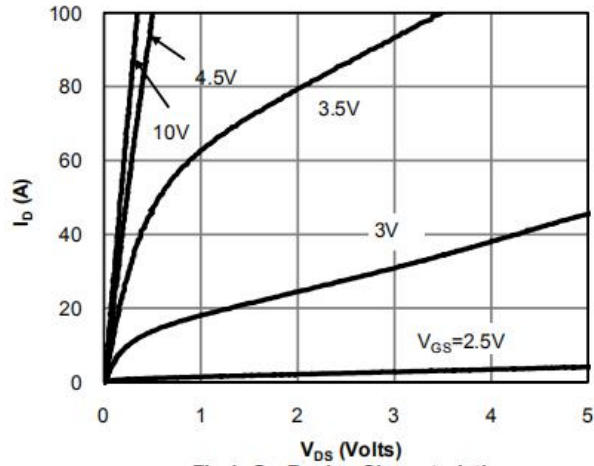


Fig 1: On-Region Characteristics

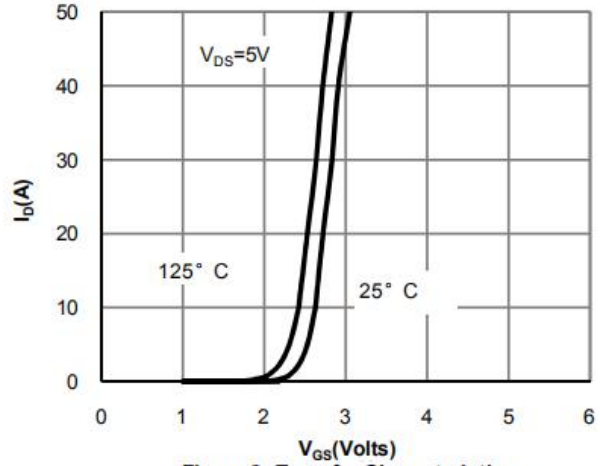


Figure 2: Transfer Characteristics

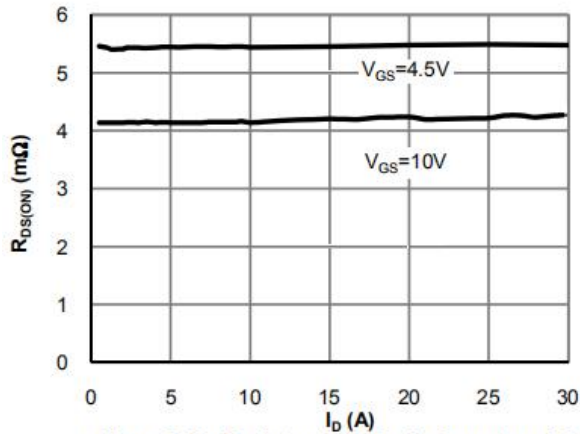


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

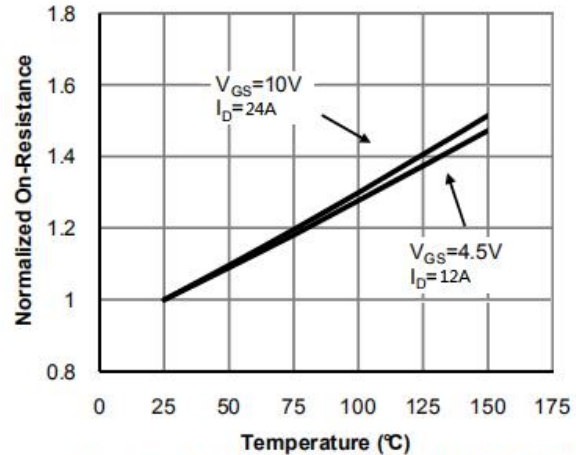


Figure 4: On-Resistance vs. Junction Temperature

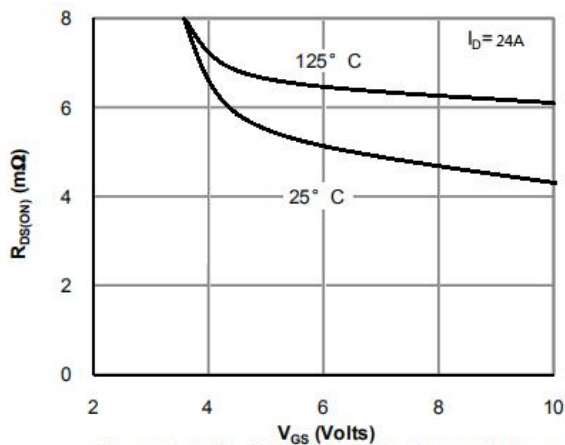


Figure 5: On-Resistance vs. Gate-Source Voltage

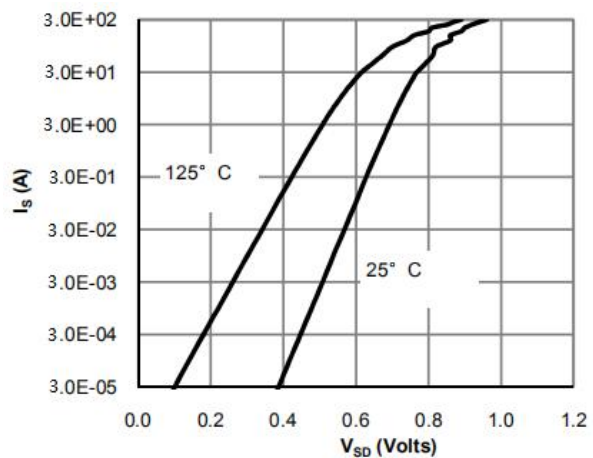
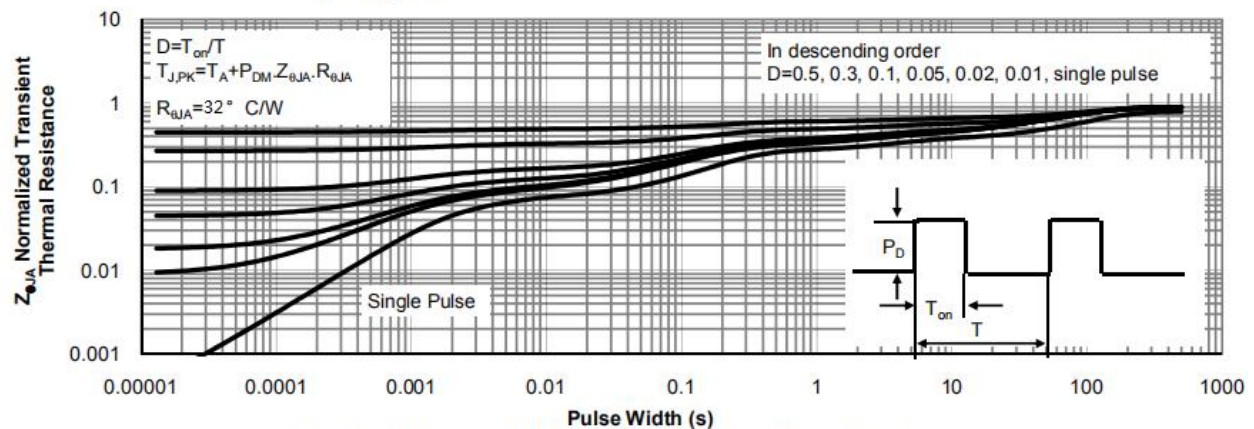
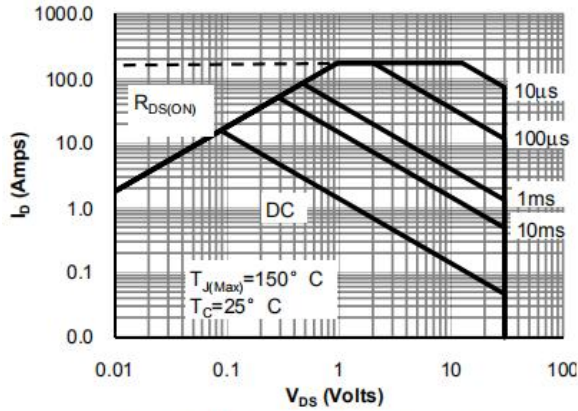
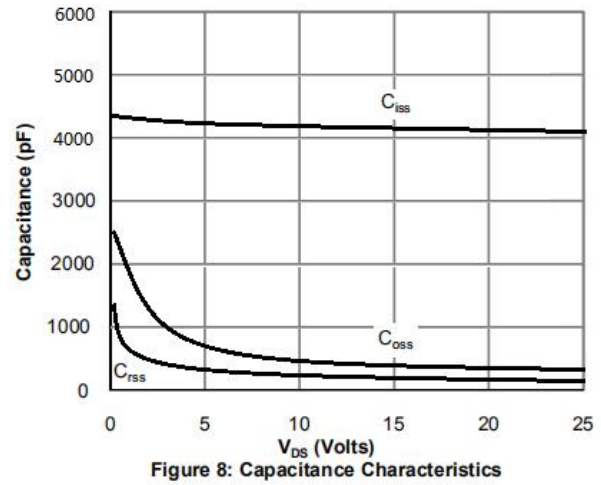
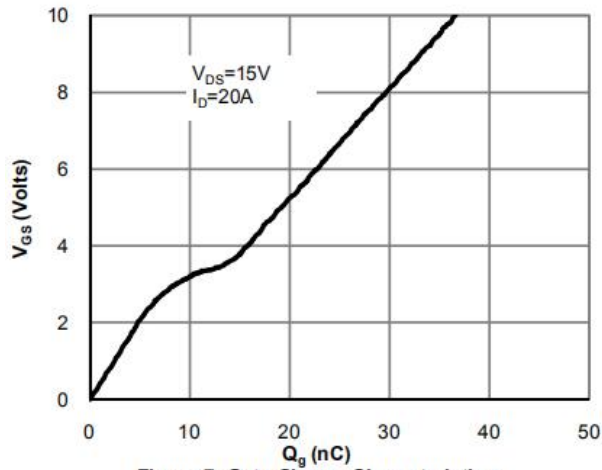
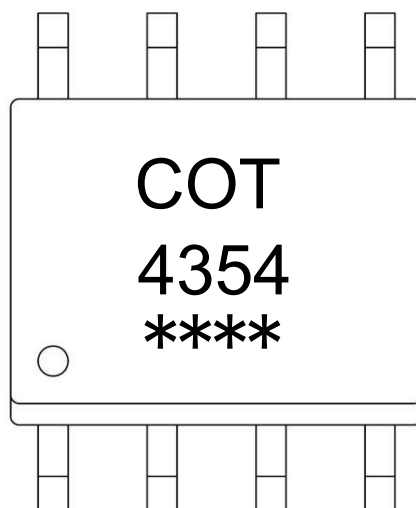


Figure 6: Body-Diode Characteristics

Electrical Characteristic Curve



Marking Instructions



Note:

COT: Company Logo

4354: Product Type.

****: Lot No. Code, code change with Lot No.

Packaging SPEC.

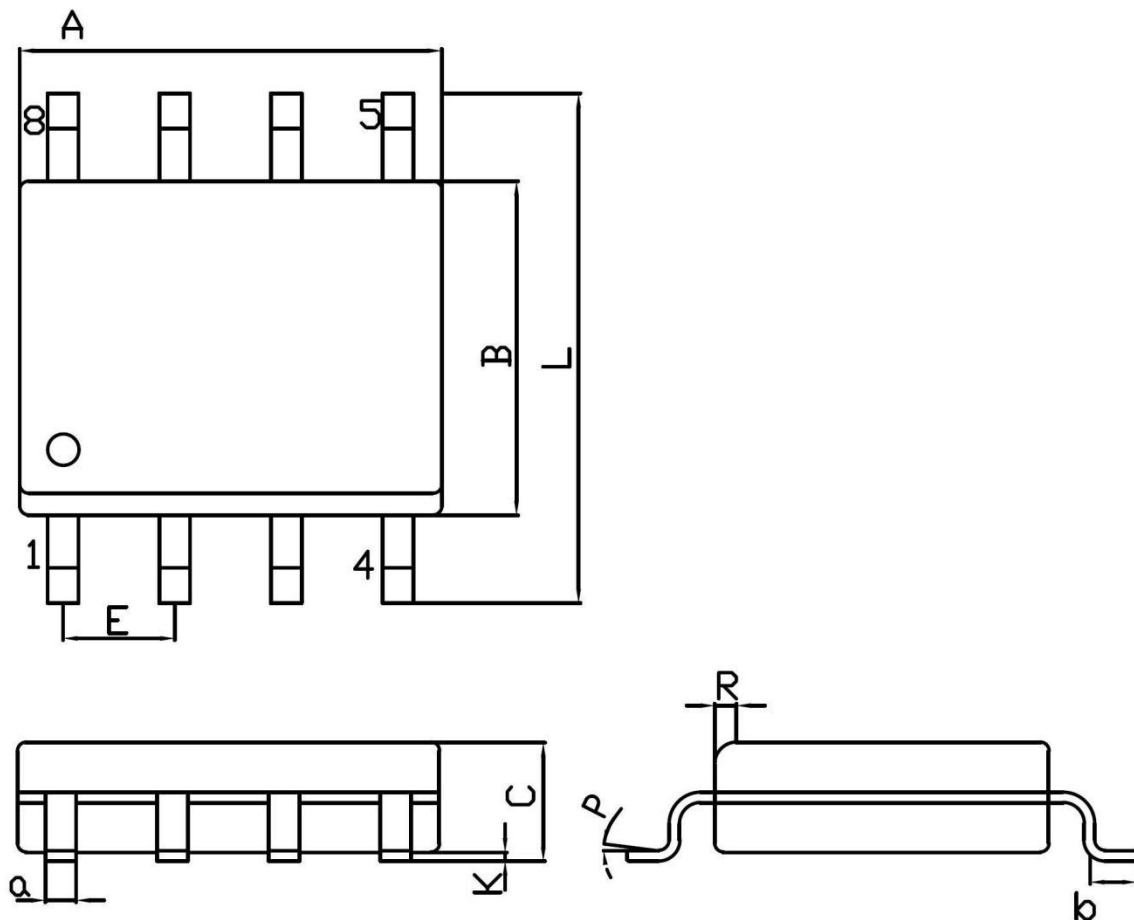
REEL INFORMATION

Package Type	Units					Dimension (unit: mm ³)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
SOP-8	4,000	2	8,000	6	48,000	13" ×12	360×360×50	380×335×366

Package Dimensions

SOP-8

Unit:mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	4.70	5.10	C	1.35	1.75
B	3.70	4.10	a	0.35	0.49
L	5.80	6.20	R	0.30	0.60
E	1.27BSC		P	0°	7°
K	0.12	0.22	b	0.40	1.25