

**UT6354-H****Power MOSFET****-5.0A, -60V P-CHANNEL
SILICON MOSFET****DESCRIPTION**

The UTC **UT6354-H** is a P-Channel Silicon MOSFET, it uses UTC's advanced technology to provide the customers with a minimum on state resistance and low gate charge, etc.

The UTC **UT6354-H** is suitable for general-purpose switching device applications.

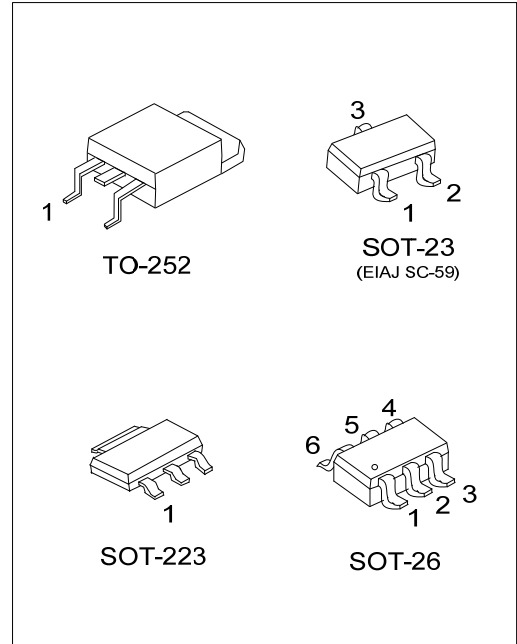
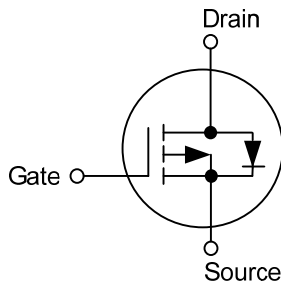
FEATURES

* $R_{DS(ON)} \leq 100 \text{ m}\Omega$ @ $V_{GS} = -10\text{V}$, $I_D = -2.0\text{A}$

$R_{DS(ON)} \leq 135 \text{ m}\Omega$ @ $V_{GS} = -4.5\text{V}$, $I_D = -1.0\text{A}$

$R_{DS(ON)} \leq 145 \text{ m}\Omega$ @ $V_{GS} = -4.0\text{V}$, $I_D = -1.0\text{A}$

* Low gate charge

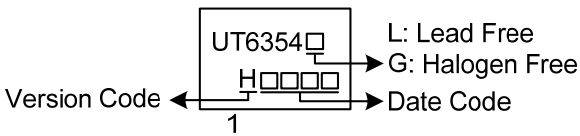
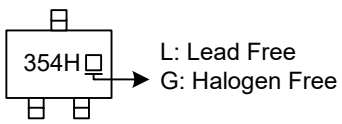
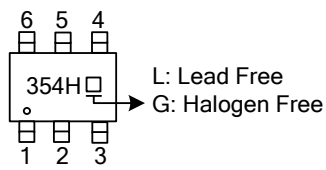
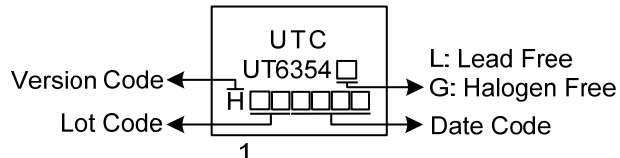
**SYMBOL****ORDERING INFORMATION**

Ordering Number		Package	Pin Assignment						Packing
Lead Free	Halogen Free		1	2	3	4	5	6	
UT6354L-AA3-R	UT6354G-AA3-R	SOT-223	G	D	S	-	-	-	Tape Reel
UT6354L-AE3-R	UT6354G-AE3-R	SOT-23	G	S	D	-	-	-	Tape Reel
UT6354L-AG6-R	UT6354G-AG6-R	SOT-26	D	D	G	S	D	D	Tape Reel
UT6354L-TN3-R	UT6354G-TN3-R	TO-252	G	D	S	-	-	-	Tape Reel

Note: Pin Assignment: G: Gate D: Drain S: Source

UT6354G-AA3-R		(1) Packing Type	(1) R: Tape Reel
		(2) Package Type	(2) AA3: SOT-223, AE3: SOT-23, AG6: SOT-26 TN3: TO-252
		(3) Green Package	(3) G: Halogen Free and Lead Free, L: Lead Free

MARKING

PACKAGE	MARKING
SOT-223	 Version Code ← H □ □ □ □ → Date Code 1 L: Lead Free G: Halogen Free
SOT-23	 354H □ → G: Halogen Free L: Lead Free G: Halogen Free
SOT-26	 354H □ → G: Halogen Free L: Lead Free G: Halogen Free
TO-252	 Version Code ← H □ □ □ □ □ → Date Code Lot Code ← 1 L: Lead Free G: Halogen Free

■ ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DS}	-60	V
Gate-Source Voltage		V_{GS}	± 20	V
Drain Current	Continuous	I_D	-5	A
	Pulsed (Note 2)	I_{DM}	-16	A
Avalanche Energy	Single Pulsed (Note 3)	E_{AS}	16	mJ
Power Dissipation	SOT-223	P_D	1.5	W
	SOT-23/SOT-26		1	W
	TO-252		2.5	W
Junction Temperature		T_J	+150	$^\circ\text{C}$
Storage Temperature		T_{STG}	-55 ~ +150	$^\circ\text{C}$

Notes: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

2. Repetitive Rating: Pulse width limited by maximum junction temperature.

3. $L = 0.1\text{mH}$, $I_{AS} = -18.3\text{A}$, $V_{DD} = -50\text{V}$, $R_G = 25\ \Omega$ Starting $T_J = 25^\circ\text{C}$

■ THERMAL DATA

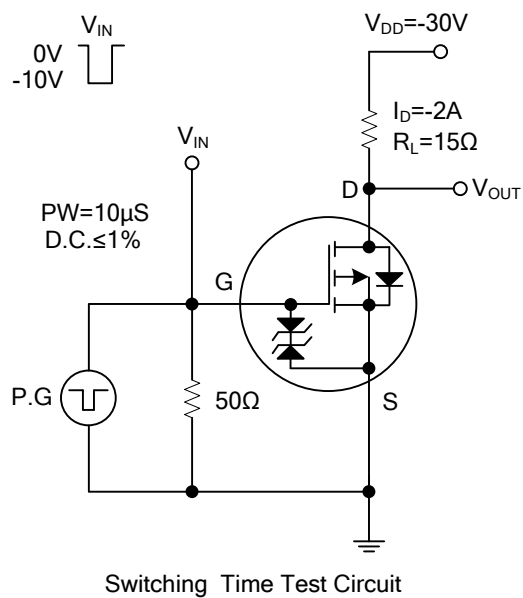
PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	SOT-223	θ_{JA}	83	$^\circ\text{C/W}$
	SOT-23/SOT-26		125	$^\circ\text{C/W}$
	TO-252		50	$^\circ\text{C/W}$

Note: Device mounted on FR-4 substrate PC board, 2oz copper, with 1inch square copper plate.

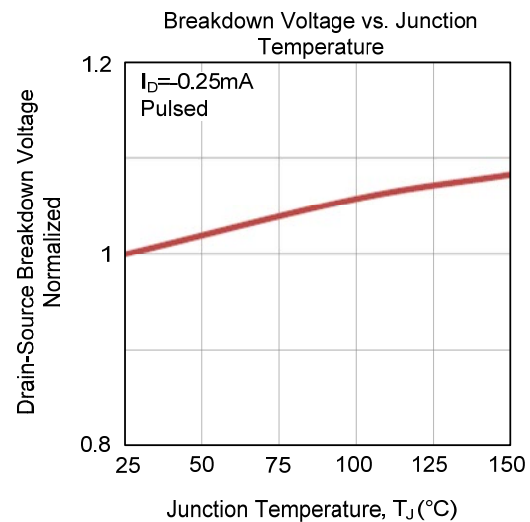
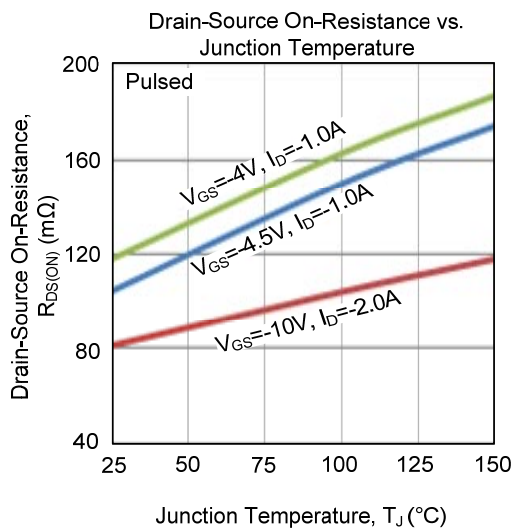
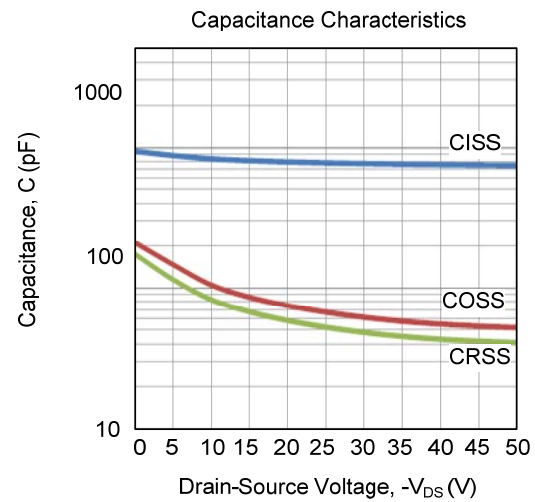
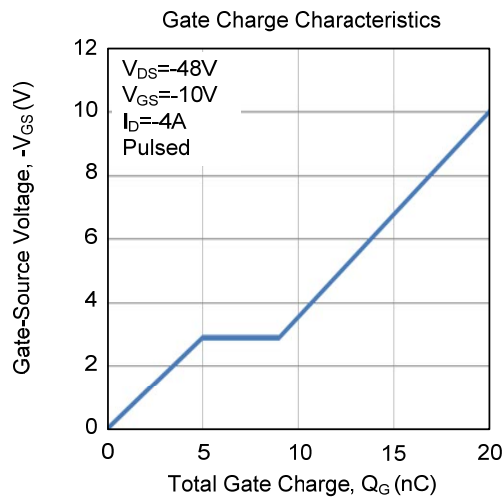
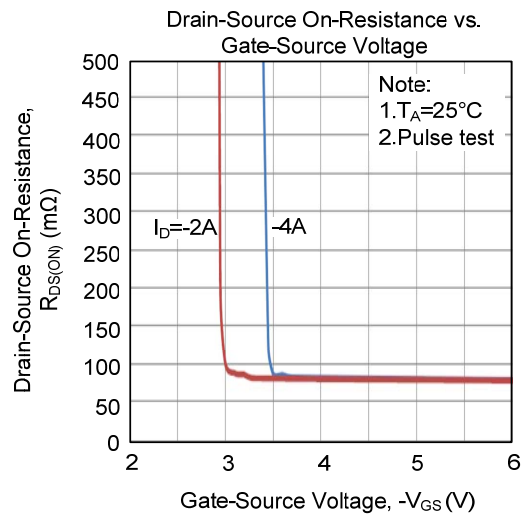
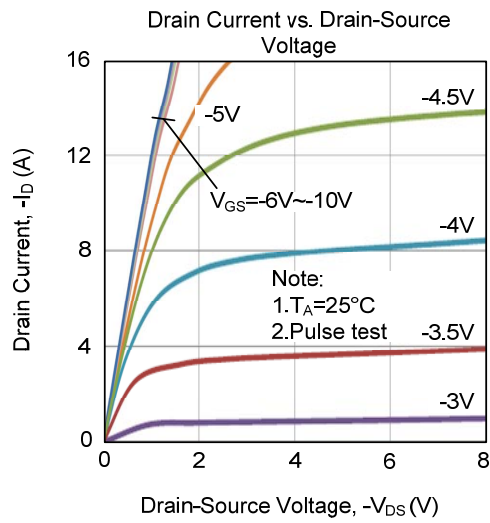
■ ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	I _D =-1mA, V _{GS} =0V	-60			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-60V, V _{GS} =0V			-1	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±16V, V _{DS} =0V			±10	μA
ON CHARACTERISTICS						
Cutoff Voltage	V _{GS(OFF)}	V _{DS} =-10V, I _D =-1mA	-1.0		-2.6	V
Static Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =-10V, I _D =-2.0A		77	100	mΩ
		V _{GS} =-4.5V, I _D =-1.0A		96	135	mΩ
		V _{GS} =-4.0V, I _D =-1.0A		103	145	mΩ
DYNAMIC PARAMETERS						
Input Capacitance	C _{ISS}	V _{DS} =-20V, f=1.0MHz		800		pF
Output Capacitance	C _{OSS}			75		pF
Reverse Transfer Capacitance	C _{RSS}			58		pF
SWITCHING PARAMETERS						
Total Gate Charge	Q _G	V _{DS} =-48V, V _{GS} =-10V, I _D =-4.0A, I _G =-1mA		20		nC
Gate to Source Charge	Q _{GS}			5		nC
Gate to Drain Charge	Q _{GD}			4		nC
Turn-ON Delay Time	t _{D(ON)}	V _{DS} =-30V, V _{GS} =-10V, I _D =-4.0A, R _G =3Ω		6		ns
Rise Time	t _R			16		ns
Turn-OFF Delay Time	t _{D(OFF)}			26		ns
Fall-Time	t _F			18		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Diode Forward Voltage	V _{SD}	I _S =-4.0A, V _{GS} =0V		-0.84	-1.2	V

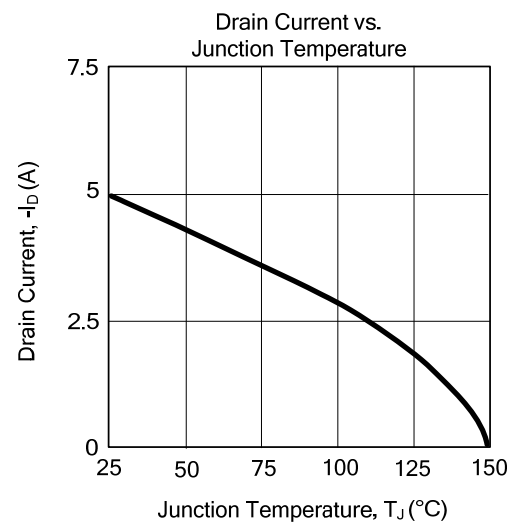
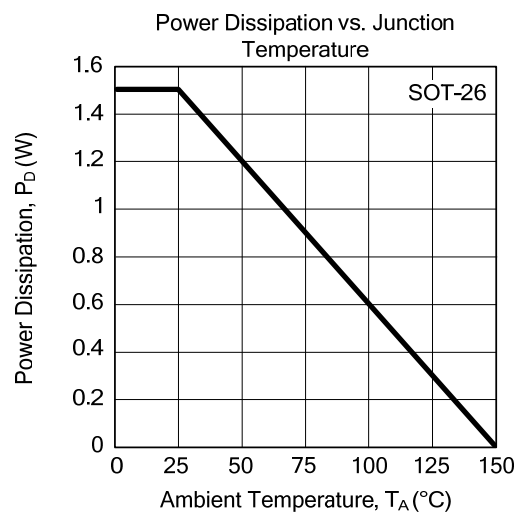
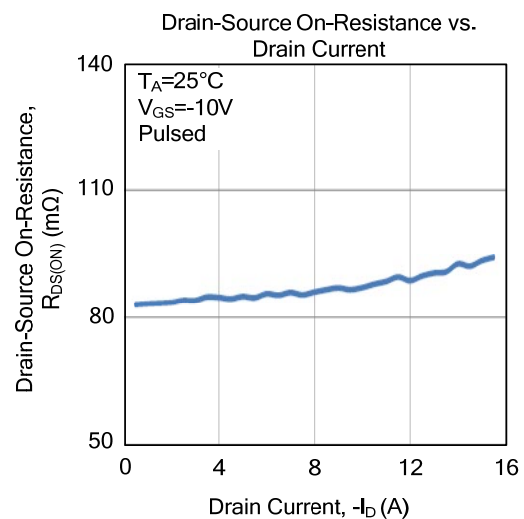
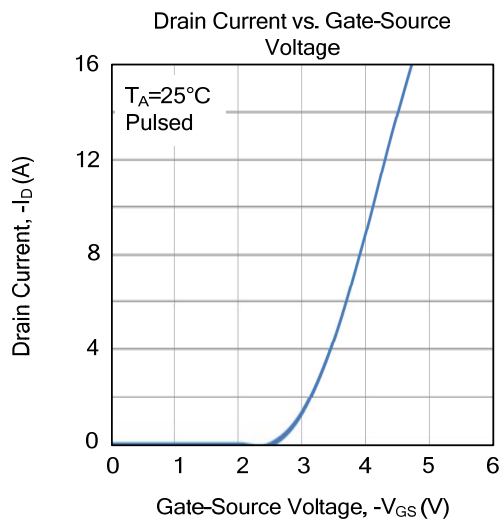
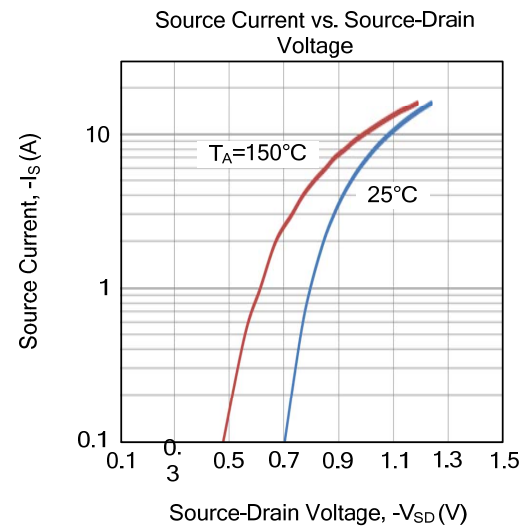
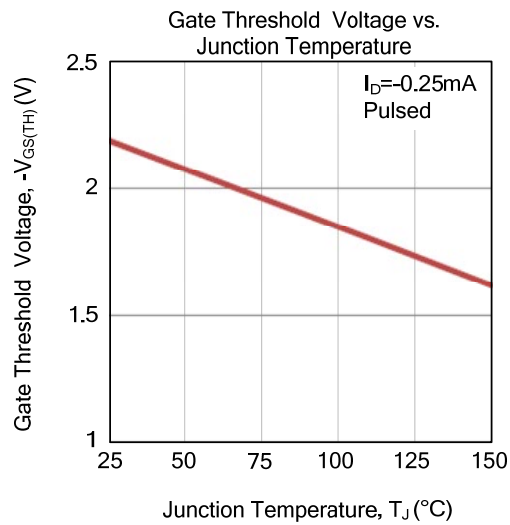
■ TEST CIRCUITS AND WAVEFORMS



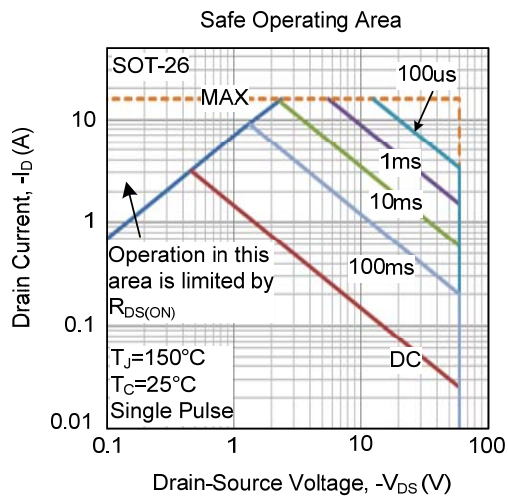
TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS (Cont.)



■ TYPICAL CHARACTERISTICS (Cont.)



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