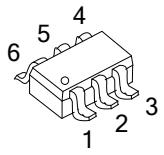
4.1A, 60V N-CHANNEL POWER MOSFET



SOT-26

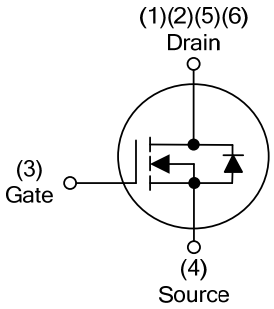
■ DESCRIPTION

The UTC **UT3458** is N-channel enhancement mode power MOSFET using UTC's advanced technology to provide the customers with perfect $R_{DS(ON)}$ and low gate charge. This device can be operated with 4.5V low gate voltage.

■ FEATURES

* V_{DS}=60V
* I_D =4.1A
* $R_{DS(ON)}$<0.1Ω @ V_{GS}=10V, I_D=3.2A
  $R_{DS(ON)}$<0.128Ω @ V_{GS}=4.5V, I_D=2.8A

■ SYMBOL



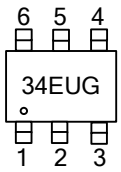
■ ORDERING INFORMATION

Ordering Number	Package	Pin Assignment						Packing
		1	2	3	4	5	6	
UT3458G-AG6-R	SOT-26	D	D	G	S	D	D	Tape Reel

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

UT3458G-AG6-R (1)Packing Type (2)Package Type (3)Green Package	(1) R: Tape Reel (2) AG6: SOT-26 (3) G: Halogen Free and Lead Free

■ MARKING



■ ABSOLUTE MAXIMUM RATINGS (T_C=25°C, unless otherwise specified)

PARAMETER			SYMBOL	RATINGS	UNIT
Drain-Source Voltage			V_{DSS}	60	V
Gate-Source Voltage			V_{GSS}	±20	V
Drain Current	Continuous (Note 2, 3)	T_A=25°C	I_D	4.1	A
		T_A=70°C		3.2	A
	Pulsed		I_{DM}	15	A
Power Dissipation (Note 2, 3)			P_D	2	W
Junction Temperature			T_J	+150	°C
Storage Temperature			T_{STG}	-55~+150	°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. Surface Mounted on FR4 Board.
3. t ≤ 5 sec

■ THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient (Note 2)	θ_{JA}	62.5	°C/W

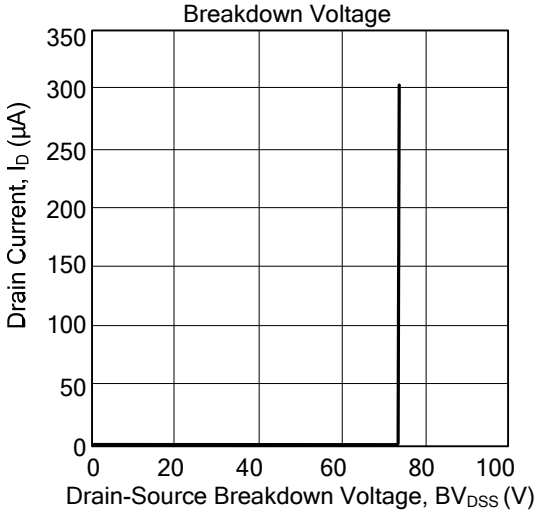
■ ELECTRICAL CHARACTERISTICS (T_J=25°C, unless otherwise noted)

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS							
Drain-Source Breakdown Voltage		BV_{DSS}	I_D=250μA, V_{GS}=0V	60			V
Drain-Source Leakage Current		I_{DSS}	V_{DS}=60V, V_{GS}=0V			1	μA
			V_{DS}=60V, V_{GS}=0V, T_J=70°C			10	μA
Gate- Source Leakage Current	Forward	I_{GSS}	V_{GS}=+20V, V_{DS}=0V			+100	nA
	Reverse		V_{GS}=-20V, V_{DS}=0V			-100	nA
ON CHARACTERISTICS							
Gate Threshold Voltage		$V_{GS(TH)}$	V_{DS}=V_{GS}, I_D=250μA	1.5		3	V
Static Drain-Source On-State Resistance		$R_{DS(ON)}$	V_{GS}=10V, I_D=3.2A		0.082	0.1	Ω
			V_{GS}=4.5V, I_D=2.8A		0.105	0.128	Ω
On State Drain Current		$I_{D(ON)}$	V_{GS}=10V, V_{DS}=5V	10			A
SWITCHING PARAMETERS							
Input Capacitance		C_{ISS}	V_{DS} =30 V, V_{GS} = 0V, f = 1MHz		350		pF
Output Capacitance		C_{OSS}			40		
Reverse Transfer Capacitance		C_{RSS}			20		
Total Gate Charge		Q_G	V_{DS}=10V, V_{DS}=48V, I_D=3.2A		7.1	11	nC
			V_{DS}=4.5V, V_{DS}=48V, I_D=3.2A		3.5	5.5	
Gate to Source Charge		Q_{GS}	V_{DS}=4.5V, V_{DS}=48V, I_D=3.2A		1.1		
Gate to Drain Charge		Q_{GD}			0.95		
Turn-ON Delay Time		$t_{D(ON)}$	V_{DD}=30V, I_D≈2.5A, R_L=12Ω, V_{GEN}=4.5V, R_G=1Ω(Note 1, 2)		16	25	ns
Rise Time		t_R			17	30	
Turn-OFF Delay Time		$t_{D(OFF)}$			12	20	
Fall Time		t_F			10	15	
Turn-ON Delay Time		$t_{D(ON)}$	V_{DD}=30V, I_D≈2.5A, R_L=12Ω, V_{GEN}=10V, R_G=2.5Ω(Note 1, 2)		5	10	
Rise Time		t_R			12	20	
Turn-OFF Delay Time		$t_{D(OFF)}$			18	30	
Fall Time		t_F			10	15	
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS							
Maximum Body-Diode Continuous Current		I_S				2.9	A
Maximum Body-Diode Pulsed Current		I_{SM}				10	A
Drain-Source Diode Forward Voltage		V_{SD}	I_S=2.5A, V_{GS}=0V		0.8	1.2	V
Body Diode Reverse Recovery Time		t_{RR}	I_F=2.5A, di/dt=100A/μs (Note 1)		25	50	ns

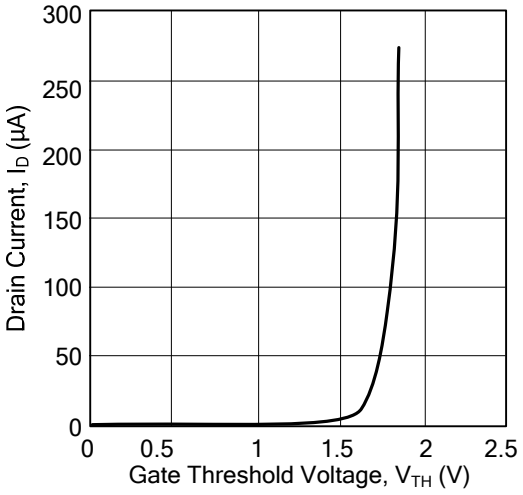
Notes: 1. Pulse Test: Pulse width ≤ 300μs, Duty cycle ≤ 2%
2. Guaranteed by design, not subject to production testing

■ TYPICAL CHARACTERISTICS

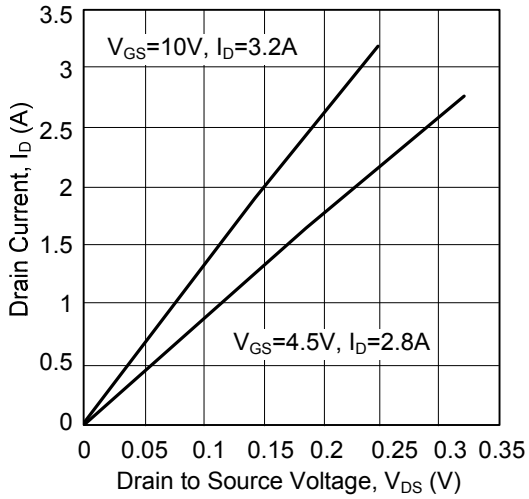
Drain Current vs. Drain-Source Breakdown Voltage



Drain Current vs. Gate Threshold Voltage



Drain-Source On-State Resistance Characteristics



Drain Current vs. Source to Drain Voltage