Pb Free Plating Product

GTM CORPORATION

ISSUED DATE :2006/10/31
REVISED DATE :

GTT3434

N-CHANNEL ENHANCEMENT MODE POWER MOSFET

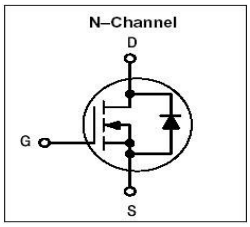
BV_{DSS}	30V
$R_{DS(ON)}$	34mΩ
I_D	6.1A

Description

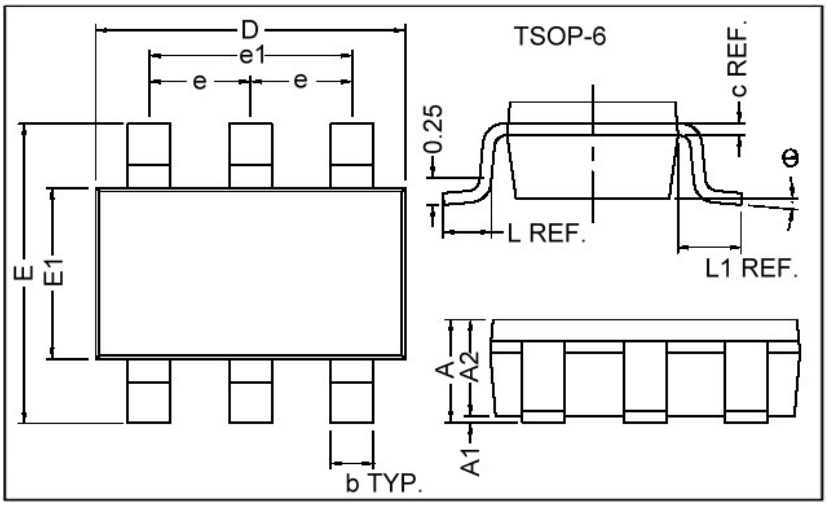
The GTT3434 uses advanced trench technology to provide excellent on-resistance and low gate charge.
The TSSOP-6 package is universally used for all commercial-industrial surface mount applications.

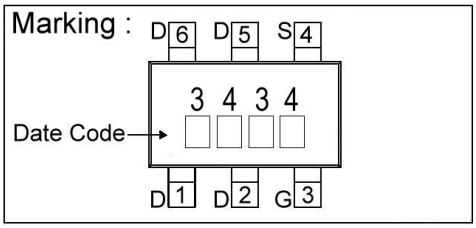
Features

* Low on-resistance
*Capable of 2.5V gate drive



Package Dimensions





REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.10 MAX.		L	0.45 REF.	
A1	0	0.10	L1	0.60 REF.	
A2	0.70	1.00	θ	0°	10°
c	0.12 REF.		b	0.30	0.50
D	2.70	3.10	e	0.95 REF.	
E	2.60	3.00	e1	1.90 REF.	
E1	1.40	1.80			

Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current[3], V_{GS}@4.5V	I_D @T_A=25℃	6.1	A
Continuous Drain Current[3], V_{GS}@4.5V	I_D @T_A=70℃	4.9	A
Pulsed Drain Current[1]	I_{DM}	30	A
Total Power Dissipation	P_D @T_A=25℃	1.14	W
Linear Derating Factor		0.01	W/℃
Operating Junction and Storage Temperature Range	Tj, Tstg	-55 ~ +150	℃

Thermal Data

Parameter	Symbol	Value	Unit
Thermal Resistance Junction-ambient[3] Max.	Rthj-a	110	℃/W

Electrical Characteristics (Tj = 25℃ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	BV_{DSS}	30	-	-	V	V_{GS}=0, I_D=250uA
Gate Threshold Voltage	$V_{GS(th)}$	0.6	-	-	V	V_{DS}=V_{GS}, I_D=1mA
Forward Transconductance	g_{fs}	-	20	-	S	V_{DS}=10V, I_D=6.1A
Gate-Source Leakage Current	I_{GSS}	-	-	±100	nA	V_{GS}= ±12V
Drain-Source Leakage Current(Tj=25℃)	I_{DSS}	-	-	1	uA	V_{DS}=30V, V_{GS}=0
Drain-Source Leakage Current(Tj=70℃)		-	-	5	uA	V_{DS}=24V, V_{GS}=0
Static Drain-Source On-Resistance[2]	$R_{DS(ON)}$	-	-	34	mΩ	V_{GS}=4.5V, I_D=6.1A
		-	-	50		V_{GS}=2.5V, I_D=2.0A
Total Gate Charge[2]	Q_g	-	8	12	nC	I_D=6.1A V_{DS}=15V V_{GS}=4.5V
Gate-Source Charge	Q_{gs}	-	1.9	-		
Gate-Drain (“Miller”) Change	Q_{gd}	-	2.6	-		
Turn-on Delay Time[2]	$T_{d(on)}$	-	21	-	ns	V_{DS}=15V I_D=1A V_{GS}=4.5V R_G=6Ω R_L=15Ω
Rise Time	T_r	-	45	-		
Turn-off Delay Time	$T_{d(off)}$	-	40	-		
Fall Time	T_f	-	30	-		

Source-Drain Diode

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Forward On Voltage[2]	V_{SD}	-	-	1.2	V	I_S=1.7A, V_{GS}=0V
Reverse Recovery Time[2]	T_{rr}	-	40	-	ns	I_S=1.7A, dI/dt=100A/μs

Notes: 1. Pulse width limited by Max. junction temperature.

2. Pulse width≦300us, duty cycle≦2%.

3. Surface mounted on 1 in^2 copper pad of FR4 board, t≦5sec; 180℃/W when mounted on Min. copper pad.

Characteristics Curve

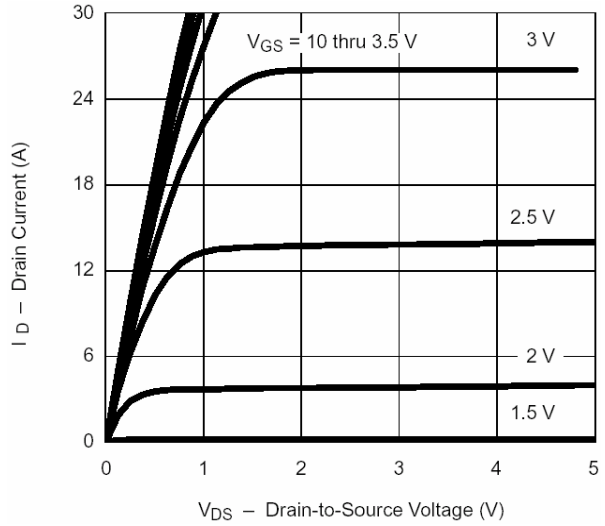


Fig 1. Typical Output Characteristics

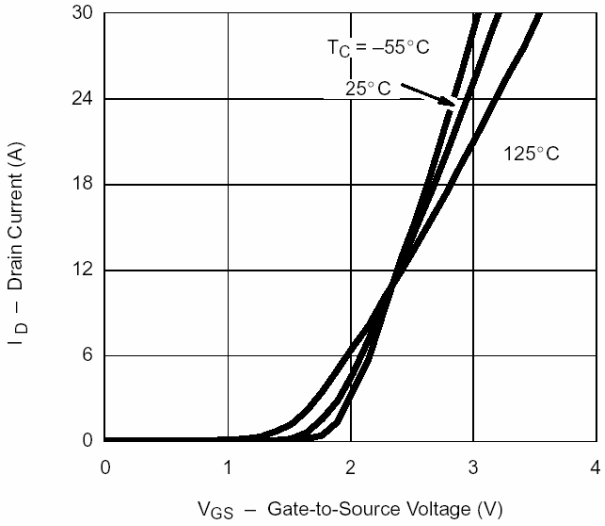


Fig 2. Transfer Characteristics

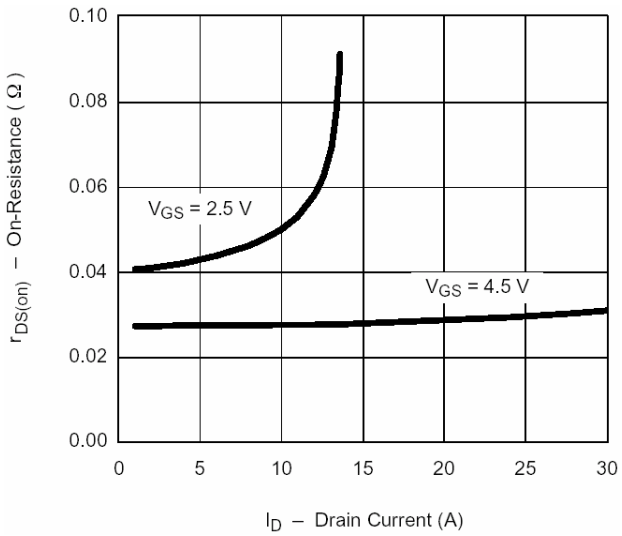


Fig 3. On-Resistance v.s. Drain Current

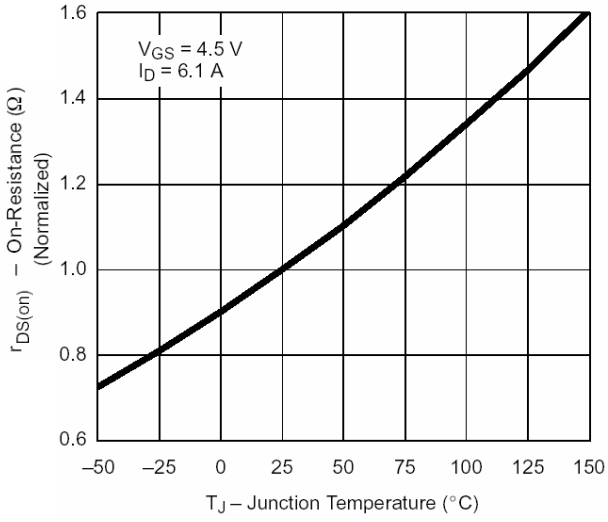


Fig 4. On-Resistance v.s. Junction Temperature

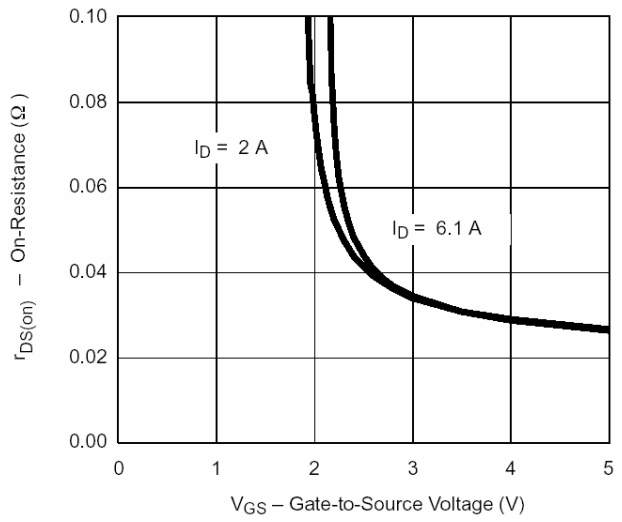


Fig 5. On-Resistance v.s. Gate-Source Voltage

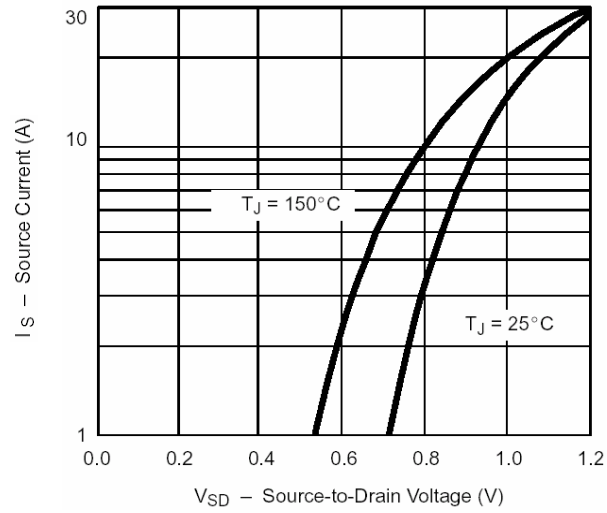


Fig 6. Body Diode Characteristics

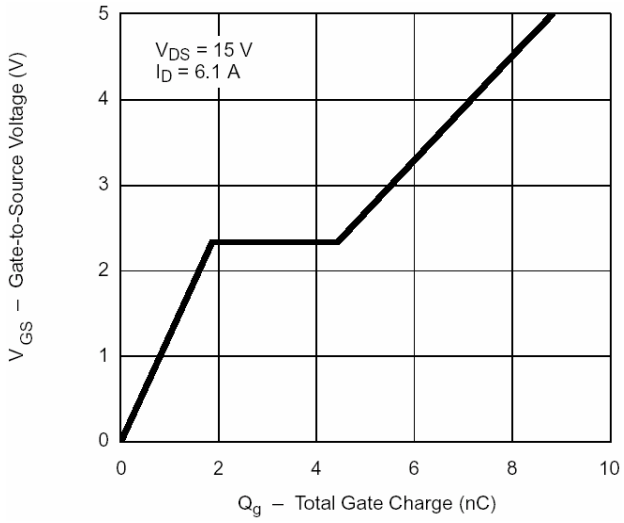


Fig 7. Gate Charge Characteristics

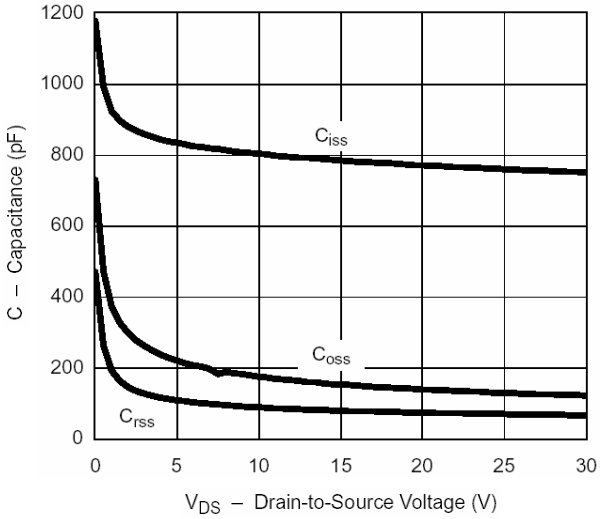


Fig 8. Typical Capacitance Characteristics

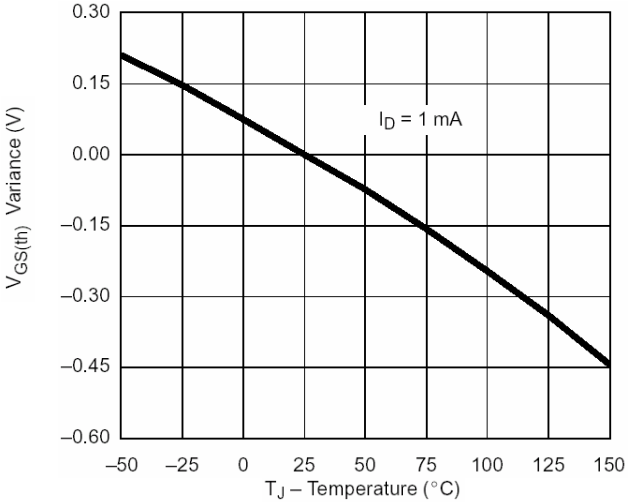


Fig 9. Threshold Voltage

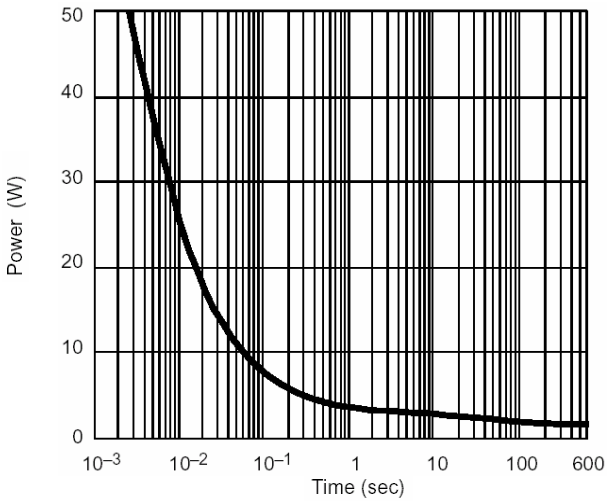


Fig 10. Single Pulse Power

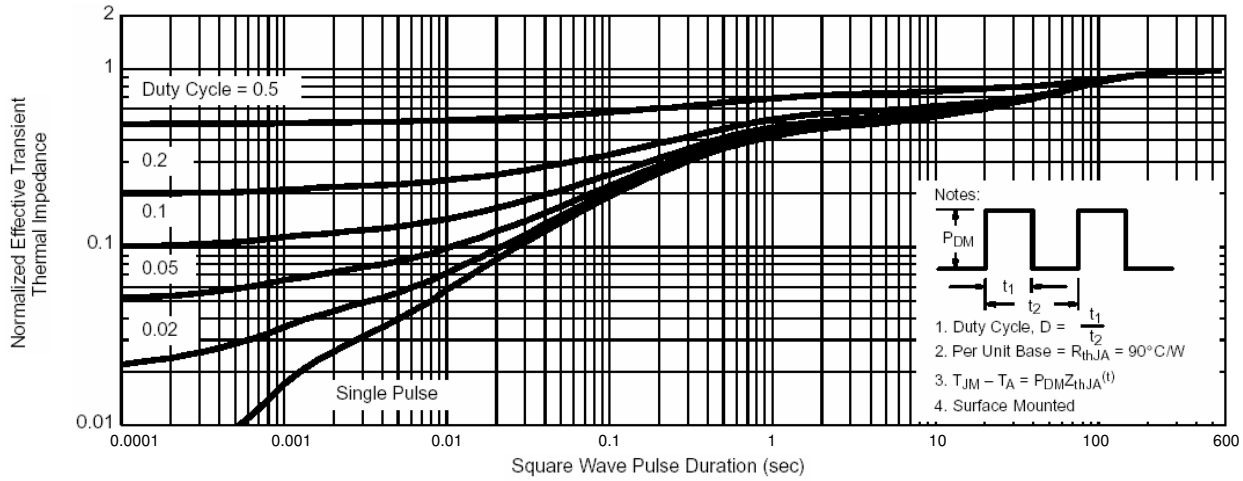


Fig 11. Normalized Maximum Transient Thermal Impedance

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