# ON Semiconductor

# Is Now



**To learn more about onsemi™, please visit our website at**
**www.onsemi.com**

**onsemi** and onsemi and other names, marks, and brands are registered and/or common law trademarks of Semiconductor Components Industries, LLC dba "**onsemi**" or its affiliates and/or subsidiaries in the United States and/or other countries. **onsemi** owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of **onsemi** product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marking.pdf. **onsemi** reserves the right to make changes at any time to any products or information herein, without notice. The information herein is provided "as-is" and **onsemi** makes no warranty, representation or guarantee regarding the accuracy of the information, product features, availability, functionality, or suitability of its products for any particular purpose, nor does **onsemi** assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using **onsemi** products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by **onsemi**. "Typical" parameters which may be provided in **onsemi** data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. **onsemi** does not convey any license under any of its intellectual property rights nor the rights of others. **onsemi** products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use **onsemi** products for any such unintended or unauthorized application, Buyer shall indemnify and hold **onsemi** and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that **onsemi** was negligent regarding the design or manufacture of the part. **onsemi** is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner. Other names and brands may be claimed as the property of others.

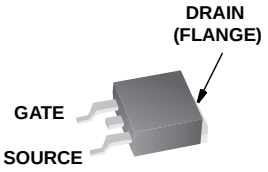
ON Semiconductor®

# HUF76639S3ST-F085

## 50A, 100V, 0.026 Ohm, N-Channel, Logic Level UltraFET® Power MOSFET

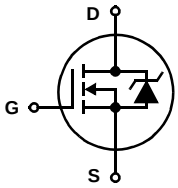
### Packaging

**JEDEC TO-263AB**




**HUF76639S3S**

### Symbol




### Features

- Ultra Low On-Resistance
  - $r_{DS(ON)}$ = 0.026Ω, $V_{GS}$ = 10V
- Simulation Models
  - Temperature Compensated PSPICE® and SABER™ Electrical Models
  - Spice and SABER Thermal Impedance Models
  - www.fairchildsemi.com
- Peak Current vs Pulse Width Curve
- UIS Rating Curve
- Switching Time vs $R_{GS}$ Curves

### Ordering Information

| PART NUMBER | PACKAGE | BRAND |
|---|---|---|
| HUF76639S3ST-F085 | TO-263AB | 76639S |

NOTE: When ordering, use the entire part number. Add the suffix T to obtain the variant in tape and reel, e.g., HUF76639S3ST.

### Absolute Maximum Ratings $T_C = 25^oC$, Unless Otherwise Specified

| | | HUF76639S3ST_F085 | UNITS |
|---|---|---|---|
| Drain to Source Voltage (Note 1) | $V_{DSS}$ | 100 | V |
| Drain to Gate Voltage ($R_{GS}$ = 20kΩ) (Note 1) | $V_{DGR}$ | 100 | V |
| Gate to Source Voltage | $V_{GS}$ | ±16 | V |
| Drain Current | | | |
| Continuous ($T_C = 25^oC$, $V_{GS}$ = 5V) | $I_D$ | 50 | A |
| Continuous ($T_C = 25^oC$, $V_{GS}$ = 10V) (Figure 2) | $I_D$ | 51 | A |
| Continuous ($T_C = 100^oC$, $V_{GS}$ = 5V) | $I_D$ | 35 | A |
| Continuous ($T_C = 100^oC$, $V_{GS}$ = 4.5V) (Figure 2) | $I_D$ | 34 | A |
| Pulsed Drain Current | $I_{DM}$ | Figure 4 | |
| Pulsed Avalanche Rating | UIS | Figures 6, 17, 18 | |
| Power Dissipation | $P_D$ | 180 | W |
| Derate Above $25^oC$ | | 1.2 | $W/^oC$ |
| Operating and Storage Temperature | $T_J$, $T_{STG}$ | -55 to 175 | $^oC$ |
| Maximum Temperature for Soldering | | | |
| Leads at 0.063in (1.6mm) from Case for 10s | $T_L$ | 300 | $^oC$ |
| Package Body for 10s, See Techbrief TB334 | $T_{pkg}$ | 260 | $^oC$ |

NOTES:

1. $T_J = 25^oC$ to $150^oC$.

***CAUTION:*** *Stresses above those listed in "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress only rating and operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied.*

©2012 Semiconductor Components Industries, LLC.
September-2017, Rev. 3

Publication Order Number:
HUF76639S3ST-F085/D

## Electrical Specifications $T_C = 25^oC$, Unless Otherwise Specified

| PARAMETER | SYMBOL | TEST CONDITIONS | | MIN | TYP | MAX | UNITS |
|---|---|---|---|---|---|---|---|
| **OFF STATE SPECIFICATIONS** | | | | | | | |
| Drain to Source Breakdown Voltage | $BV_{DSS}$ | $I_D$ = 250μA, $V_{GS}$ = 0V (Figure 12) | | 100 | - | - | V |
| | | $I_D$ = 250μA, $V_{GS}$ = 0V , $T_C$ = -40$^o$C (Figure 12) | | 90 | - | - | V |
| Zero Gate Voltage Drain Current | $I_{DSS}$ | $V_{DS}$ = 95V, $V_{GS}$ = 0V | | - | - | 1 | μA |
| | | $V_{DS}$ = 90V, $V_{GS}$ = 0V, $T_C$ = 150$^o$C | | - | - | 250 | μA |
| Gate to Source Leakage Current | $I_{GSS}$ | $V_{GS}$ = ±16V | | - | - | ±100 | nA |
| **ON STATE SPECIFICATIONS** | | | | | | | |
| Gate to Source Threshold Voltage | $V_{GS(TH)}$ | $V_{GS}$ = $V_{DS}$, $I_D$ = 250μA (Figure 11) | | 1 | - | 3 | V |
| Drain to Source On Resistance | $r_{DS(ON)}$ | $I_D$ = 51A, $V_{GS}$ = 10V (Figures 9, 10) | | - | 0.023 | 0.026 | Ω |
| **THERMAL SPECIFICATIONS** | | | | | | | |
| Thermal Resistance Junction to Case | $R_{\theta JC}$ | TO-263 | | - | - | 0.83 | $^o$C/W |
| Thermal Resistance Junction to Ambient | $R_{\theta JA}$ | | | - | - | 62 | $^o$C/W |
| **SWITCHING SPECIFICATIONS** ($V_{GS}$ = 4.5V) | | | | | | | |
| Turn-On Time | $t_{ON}$ | $V_{DD}$ = 50V, $I_D$ = 34A<br>$V_{GS}$ = 4.5V, $R_{GS}$ = 12Ω<br>(Figures 15, 21, 22) | | - | - | 336 | ns |
| Turn-On Delay Time | $t_{d(ON)}$ | | | - | 17 | - | ns |
| Rise Time | $t_r$ | | | - | 207 | - | ns |
| Turn-Off Delay Time | $t_{d(OFF)}$ | | | - | 83 | - | ns |
| Fall Time | $t_f$ | | | - | 136 | - | ns |
| Turn-Off Time | $t_{OFF}$ | | | - | - | 328 | ns |
| **SWITCHING SPECIFICATIONS** ($V_{GS}$ = 10V) | | | | | | | |
| Turn-On Time | $t_{ON}$ | $V_{DD}$ = 50V, $I_D$ = 51A<br>$V_{GS}$ = 10V, $R_{GS}$ = 12Ω<br>(Figures 16, 21, 22) | | - | - | 96 | ns |
| Turn-On Delay Time | $t_{d(ON)}$ | | | - | 10 | - | ns |
| Rise Time | $t_r$ | | | - | 55 | - | ns |
| Turn-Off Delay Time | $t_{d(OFF)}$ | | | - | 151 | - | ns |
| Fall Time | $t_f$ | | | - | 110 | - | ns |
| Turn-Off Time | $t_{OFF}$ | | | - | - | 392 | ns |
| **GATE CHARGE SPECIFICATIONS** | | | | | | | |
| Total Gate Charge | $Q_{g(TOT)}$ | $V_{GS}$ = 0V to 10V | $V_{DD}$ = 50V,<br>$I_D$ = 35A,<br>$I_{g(REF)}$ = 1.0mA<br>(Figures 14, 19, 20) | - | 71 | 86 | nC |
| Gate Charge at 5V | $Q_{g(5)}$ | $V_{GS}$ = 0V to 5V | | - | 39 | 47 | nC |
| Threshold Gate Charge | $Q_{g(TH)}$ | $V_{GS}$ = 0V to 1V | | - | 2.0 | 2.4 | nC |
| Gate to Source Gate Charge | $Q_{gs}$ | | | - | 6 | - | nC |
| Gate to Drain “Miller” Charge | $Q_{gd}$ | | | - | 19 | - | nC |
| **CAPACITANCE SPECIFICATIONS** | | | | | | | |
| Input Capacitance | $C_{ISS}$ | $V_{DS}$ = 25V, $V_{GS}$ = 0V,<br>f = 1MHz<br>(Figure 13) | | - | 2400 | - | pF |
| Output Capacitance | $C_{OSS}$ | | | - | 520 | - | pF |
| Reverse Transfer Capacitance | $C_{RSS}$ | | | - | 140 | - | pF |

## Source to Drain Diode Specifications

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|---|---|---|---|---|---|---|
| Source to Drain Diode Voltage | $V_{SD}$ | $I_{SD}$ = 35A | - | - | 1.25 | V |
| | | $I_{SD}$ = 15A | - | - | 1.0 | V |
| Reverse Recovery Time | $t_{rr}$ | $I_{SD}$ = 35A, $dI_{SD}/dt$ = 100A/μs | - | - | 137 | ns |
| Reverse Recovered Charge | $Q_{RR}$ | $I_{SD}$ = 35A, $dI_{SD}/dt$ = 100A/μs | - | - | 503 | nC |

## Typical Performance Curves

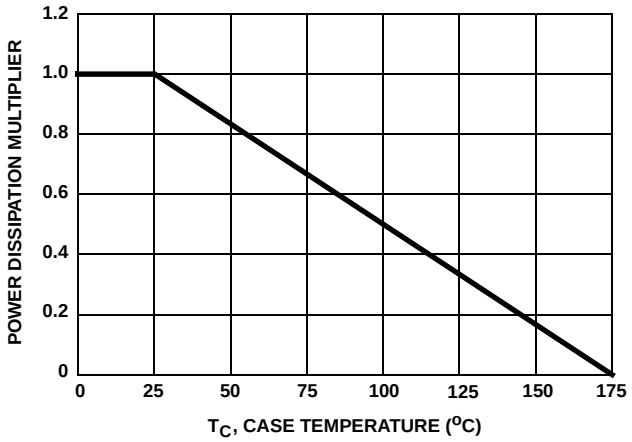



FIGURE 1. NORMALIZED POWER DISSIPATION vs CASE TEMPERATURE

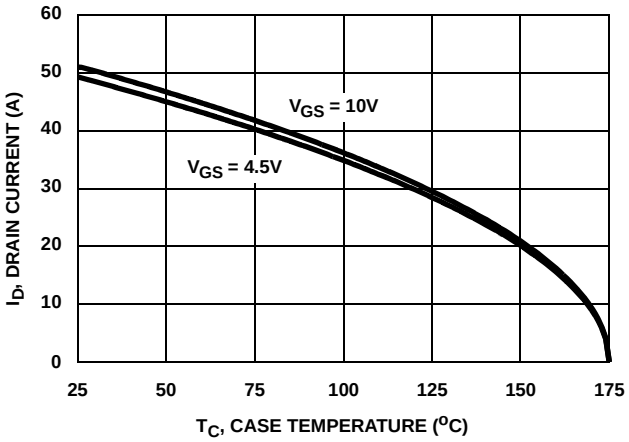



FIGURE 2. MAXIMUM CONTINUOUS DRAIN CURRENT vs CASE TEMPERATURE

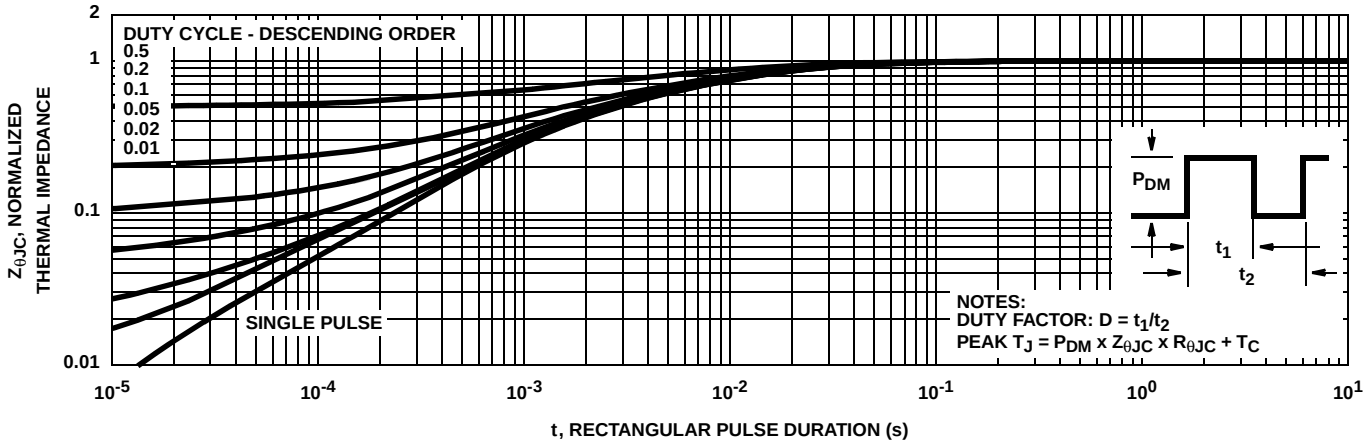



FIGURE 3. NORMALIZED MAXIMUM TRANSIENT THERMAL IMPEDANCE

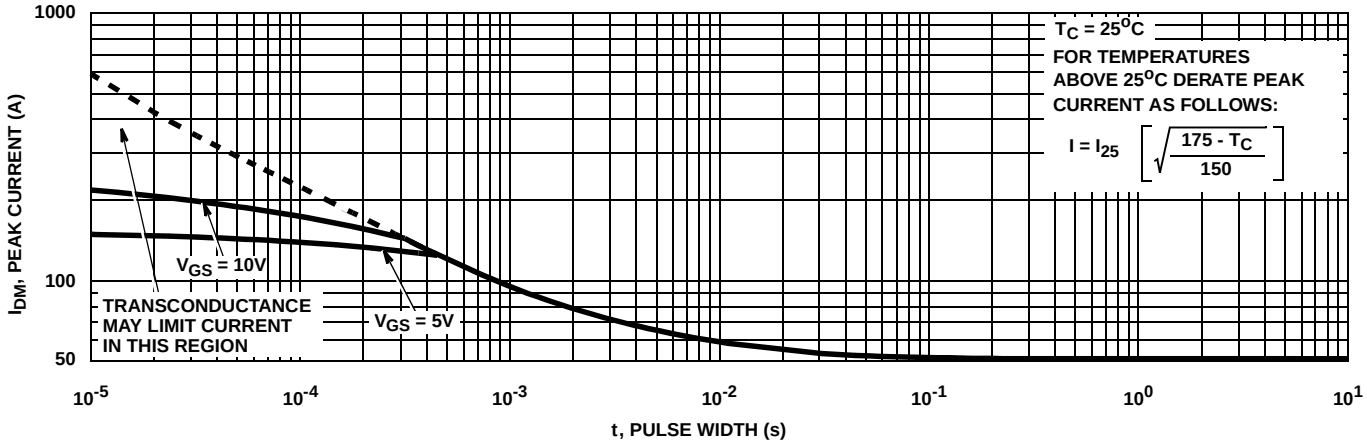



FIGURE 4. PEAK CURRENT CAPABILITY

## Typical Performance Curves (Continued)

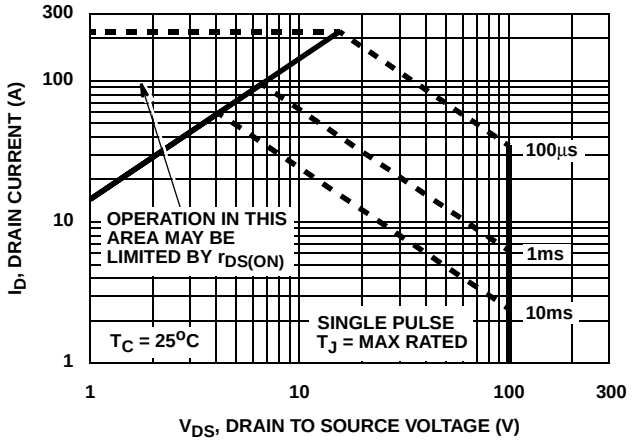



FIGURE 5. FORWARD BIAS SAFE OPERATING AREA

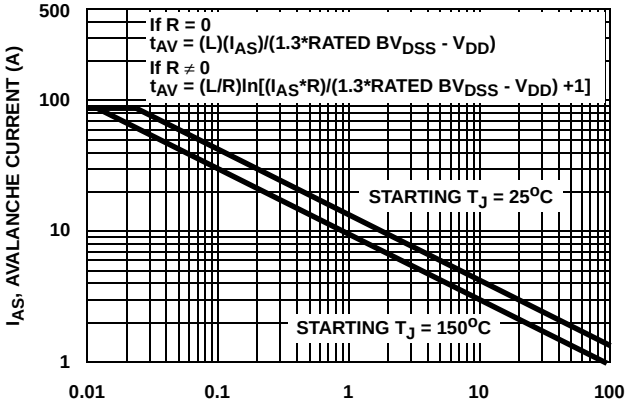



FIGURE 6. UNCLAMPED INDUCTIVE SWITCHING CAPABILITY

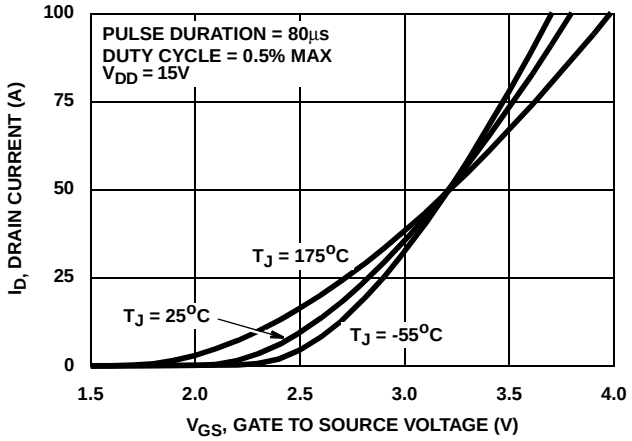



FIGURE 7. TRANSFER CHARACTERISTICS

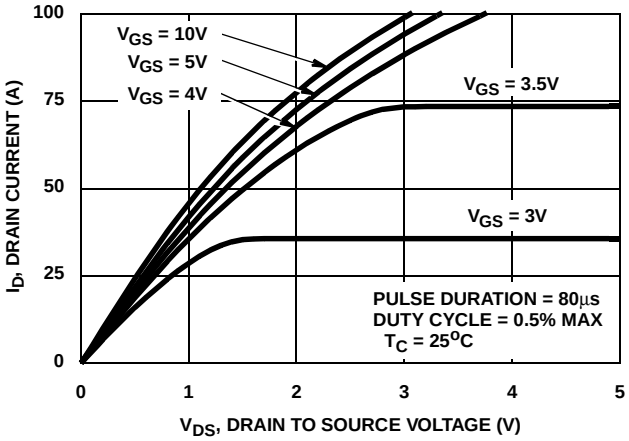



FIGURE 8. SATURATION CHARACTERISTICS

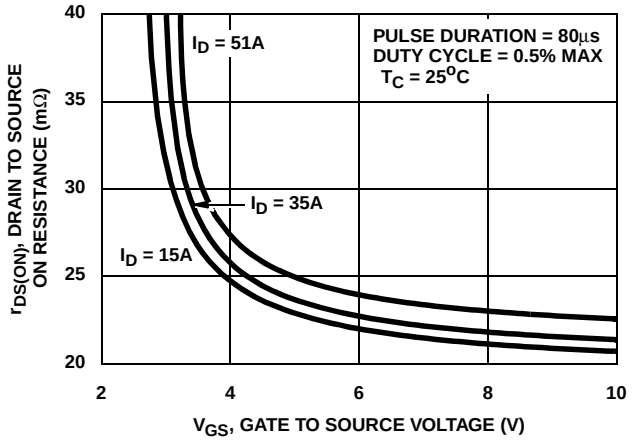



FIGURE 9. DRAIN TO SOURCE ON RESISTANCE vs GATE VOLTAGE AND DRAIN CURRENT

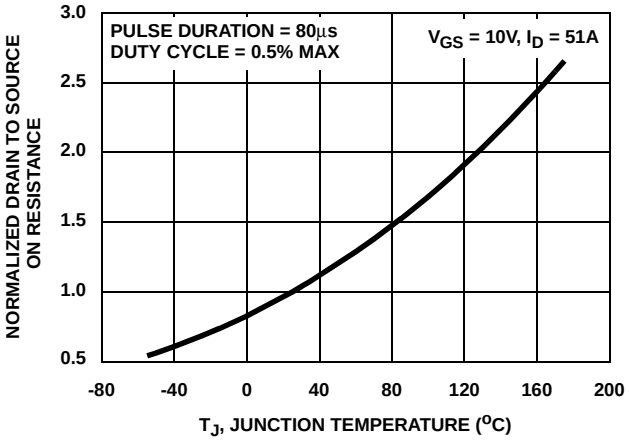



FIGURE 10. NORMALIZED DRAIN TO SOURCE ON RESISTANCE vs JUNCTION TEMPERATURE

## Typical Performance Curves (Continued)

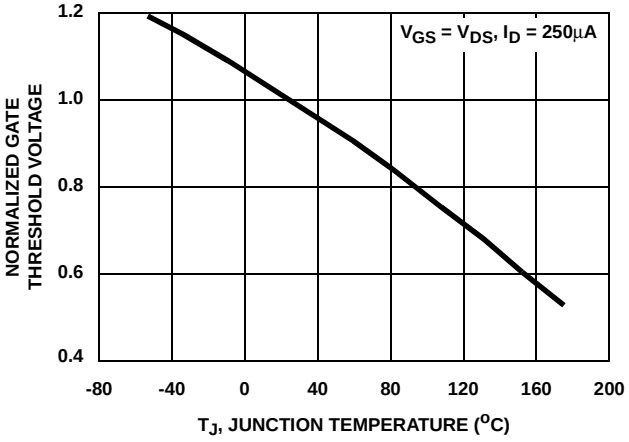



FIGURE 11. NORMALIZED GATE THRESHOLD VOLTAGE vs JUNCTION TEMPERATURE

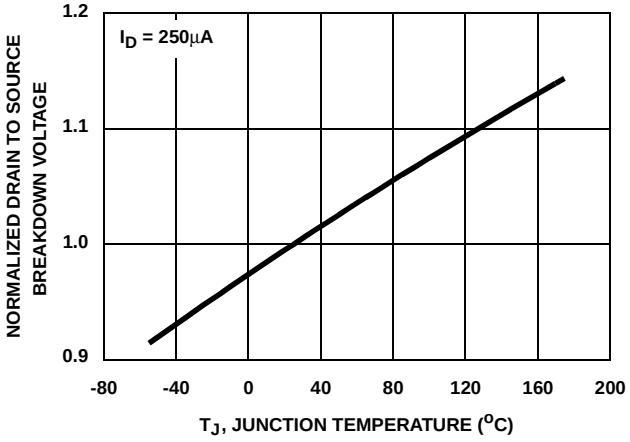



FIGURE 12. NORMALIZED DRAIN TO SOURCE BREAKDOWN VOLTAGE vs JUNCTION TEMPERATURE

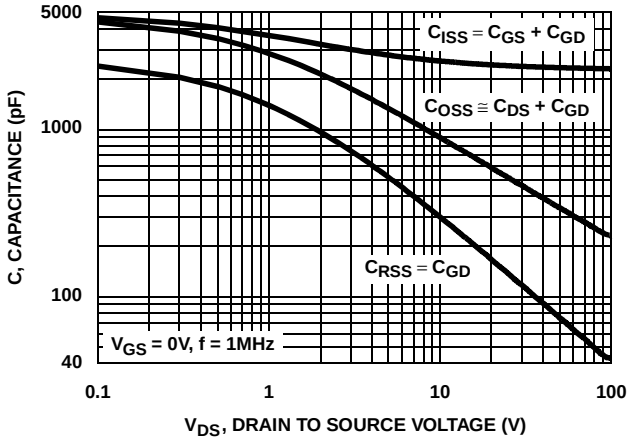



FIGURE 13. CAPACITANCE vs DRAIN TO SOURCE VOLTAGE

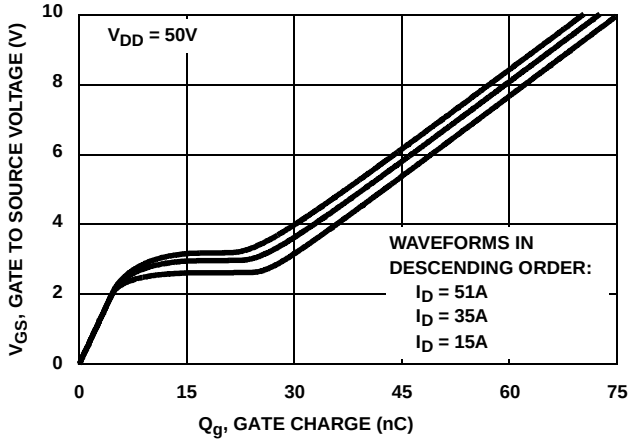



FIGURE 14. GATE CHARGE WAVEFORMS FOR CONSTANT GATE CURRENT

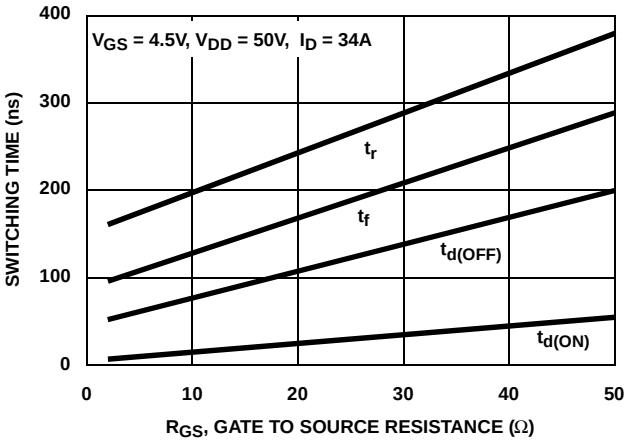



FIGURE 15. SWITCHING TIME vs GATE RESISTANCE

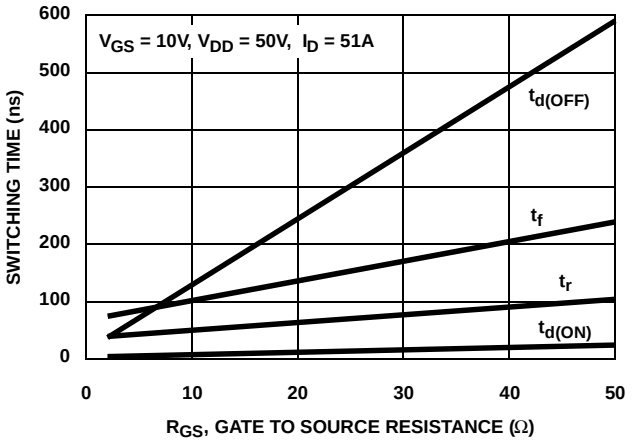



FIGURE 16. SWITCHING TIME vs GATE RESISTANCE

## Test Circuits and Waveforms

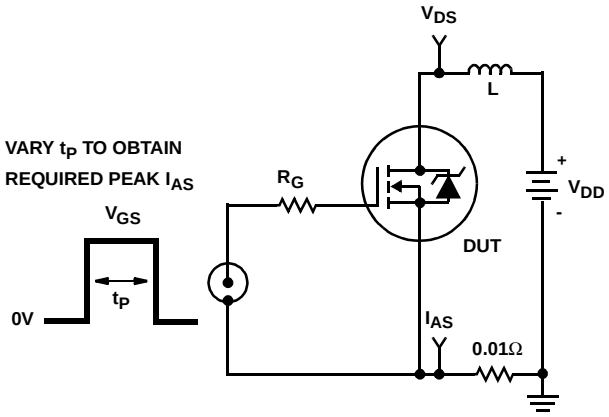



FIGURE 17. UNCLAMPED ENERGY TEST CIRCUIT

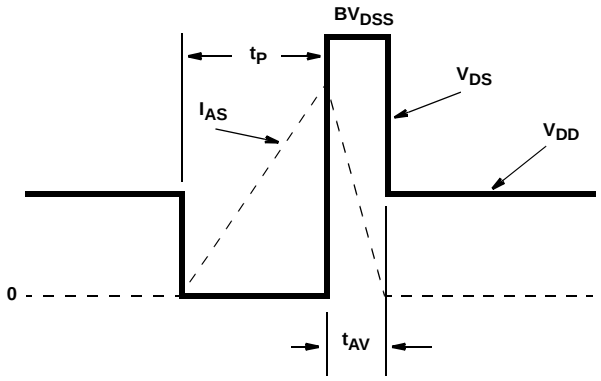



FIGURE 18. UNCLAMPED ENERGY WAVEFORMS

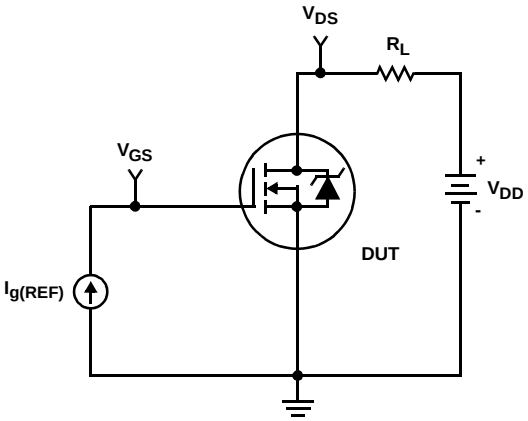



FIGURE 19. GATE CHARGE TEST CIRCUIT

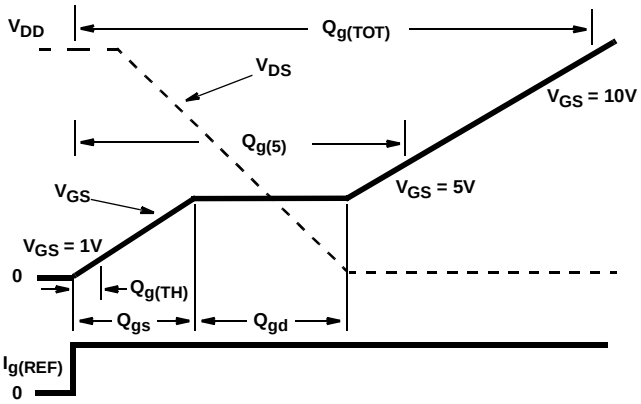



FIGURE 20. GATE CHARGE WAVEFORMS

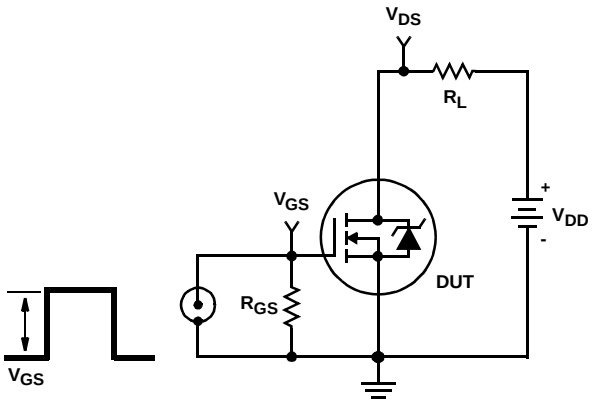



FIGURE 21. SWITCHING TIME TEST CIRCUIT

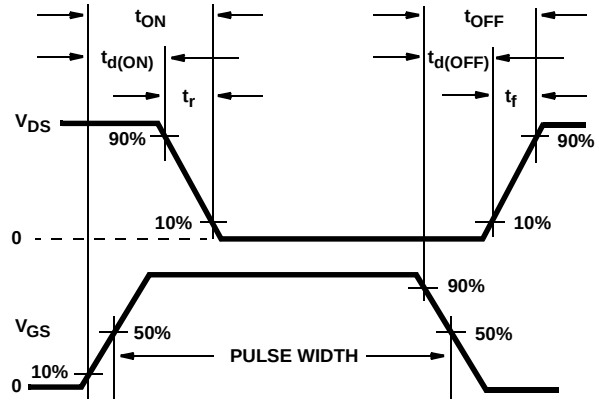



FIGURE 22. SWITCHING TIME WAVEFORM

## PSPICE Electrical Model

.SUBCKT HUF76639 2 1 3 ;  rev 26 July 1999

CA 12 8 4.2e-9
CB 15 14 4.2e-9
CIN 6 8 2.27e-9

DBODY 7 5 DBODYMOD
DBREAK 5 11 DBREAKMOD
DPLCAP 10 5 DPLCAPMOD

EBREAK 11 7 17 18 118.2
EDS 14 8 5 8 1
EGS 13 8 6 8 1
ESG 6 10 6 8 1
EVTHRES 6 21 19 8 1
EVTEMP 20 6 18 22 1

IT 8 17 1

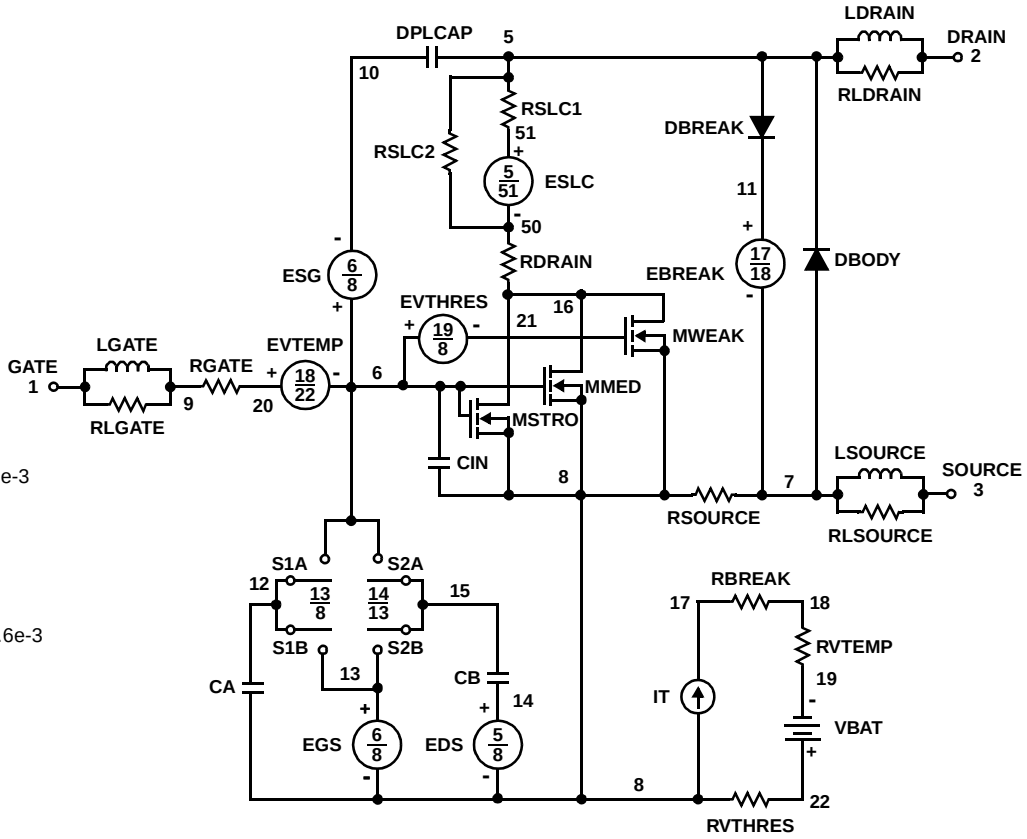
LDRAIN 2 5 1.0e-9
LGATE 1 9 5.1e-9
LSOURCE 3 7 3.1e-9

MMED 16 6 8 8 MMEDMOD
MSTRO 16 6 8 8 MSTROMOD
MWEAK 16 21 8 8 MWEAKMOD

RBREAK 17 18 RBREAKMOD 1
RDRAIN 50 16 RDRAINMOD 15.8e-3
RGATE 9 20 1.94
RLDRAIN 2 5 10
RLGATE 1 9 51
RLSOURCE 3 7 31
RSLC1 5 51 RSLCMOD 1e-6
RSLC2 5 50 1e3
RSOURCE 8 7 RSOURCEMOD 3.6e-3
RVTHRES 22 8 RVTHRESMOD 1
RVTEMP 18 19 RVTEMPMOD 1

S1A 6 12 13 8 S1AMOD
S1B 13 12 13 8 S1BMOD
S2A 6 15 14 13 S2AMOD
S2B 13 15 14 13 S2BMOD

VBAT 22 19 DC 1




ESLC 51 50  VALUE = {(V(5,51)/ABS(V(5,51)))*(PWR(V(5,51)/(1e-6*99),3.5))}

.MODEL DBODYMOD D (IS = 2.6e-12 RS = 2.65e-3 IKF = 6 TRS1 = 1.5e-3 TRS2 = 3.5e-6 CJO = 2.1e-9 TT = 5.6e-8 M = 0.52)
.MODEL DBREAKMOD D (RS = 2.5e-1 TRS1 = 1e-4 TRS2 = -1e-6)
.MODEL DPLCAPMOD D (CJO = 2.6e-9 IS = 1e-30 M = 0.89 N = 10)
.MODEL MMEDMOD NMOS (VTO = 1.77 KP = 7 IS = 1e-30 N = 10 TOX = 1 L = 1U W = 1U RG = 1.94)
.MODEL MSTROMOD NMOS (VTO = 2.06 KP = 95 IS = 1e-30 N = 10 TOX = 1 L = 1U W = 1U)
.MODEL MWEAKMOD NMOS (VTO = 1.48 KP = 0.12 IS = 1e-30 N = 10 TOX = 1 L = 1U W = 1U RG = 19.4 RS = .1)
.MODEL RBREAKMOD RES (TC1 = 1.05e-3 TC2 = -5e-7)
.MODEL RDRAINMOD RES (TC1 = 8.5e-3 TC2 = 2.3e-5)
.MODEL RSLCMOD RES (TC1 = 3.4e-3 TC2 = 2.5e-6)
.MODEL RSOURCEMOD RES (TC1 = 1e-3 TC2 = 1e-6)
.MODEL RVTHRESMOD RES (TC1 = -1.9e-3 TC2 = -4.5e-6)
.MODEL RVTEMPMOD RES (TC1 = -1.7e-3 TC2 = 1.5e-6)

.MODEL S1AMOD VSWITCH (RON = 1e-5 ROFF = 0.1 VON = -4.5 VOFF = -2.0)
.MODEL S1BMOD VSWITCH (RON = 1e-5 ROFF = 0.1 VON = -2.0 VOFF = -4.5)
.MODEL S2AMOD VSWITCH (RON = 1e-5 ROFF = 0.1 VON = -0.5 VOFF = 0.3)
.MODEL S2BMOD VSWITCH (RON = 1e-5 ROFF = 0.1 VON = 0.3 VOFF = -0.5)

.ENDS

NOTE:  For further discussion of the PSPICE model, consult **A New PSPICE Sub-Circuit for the Power MOSFET Featuring Global Temperature Options**; IEEE Power Electronics Specialist Conference Records, 1991, written by William J. Hepp and C. Frank Wheatley.

## SABER Electrical Model

REV 26 July 1999

```
template huf76639 n2,n1,n3
electrical n2,n1,n3
{
var i iscl
d..model dbodymod =  (is = 2.6e-12, cjo = 2.1e-9, tt = 5.6e-8, m = 0.52, n=10)
d..model dbreakmod = ()
d..model dplcapmod =  (cjo = 2.6e-9, is = 1e-30, m = 0.89)
m..model mmedmod = (type=_n, vto = 1.77, kp = 7, is = 1e-30, tox = 1)
m..model mstrongmod = (type=_n, vto = 2.06,kp = 95, is = 1e-30, tox = 1)
m..model mweakmod = (type=_n, vto = 1.48, kp = 0.12,is = 1e-30, tox = 1)
sw_vcsp..model s1amod =  (ron = 1e-5, roff = 0.1, von = -4.5, voff = -2.0)
sw_vcsp..model s1bmod =  (ron = 1e-5, roff = 0.1, von = -2.0, voff = -4.5)
sw_vcsp..model s2amod =  (ron = 1e-5, roff = 0.1, von = -0.5, voff = 0.3)
sw_vcsp..model s2bmod =  (ron = 1e-5, roff = 0.1, von = 0.3, voff = -0.5)

c.ca n12 n8 = 4.2e-9
c.cb n15 n14 = 4.2e-9
c.cin n6 n8 = 2.27e-9

d.dbody n7 n71 = model = dbodymod
d.dbreak n72 n11 = model = dbreakmod
d.dplcap n10 n5 = model = dplcapmod

i.it n8 n17 = 1

l.ldrain n2 n5 = 1.0e-9
l.lgate n1 n9 = 5.1e-9
l.lsource n3 n7 = 3.1e-9

m.mmed n16 n6 n8 n8 = model = mmedmod, l = 1u, w = 1u
m.mstrong n16 n6 n8 n8 = model = mstrongmod, l = 1u, w = 1u
m.mweak n16 n21 n8 n8 = model = mweakmod, l = 1u, w = 1u

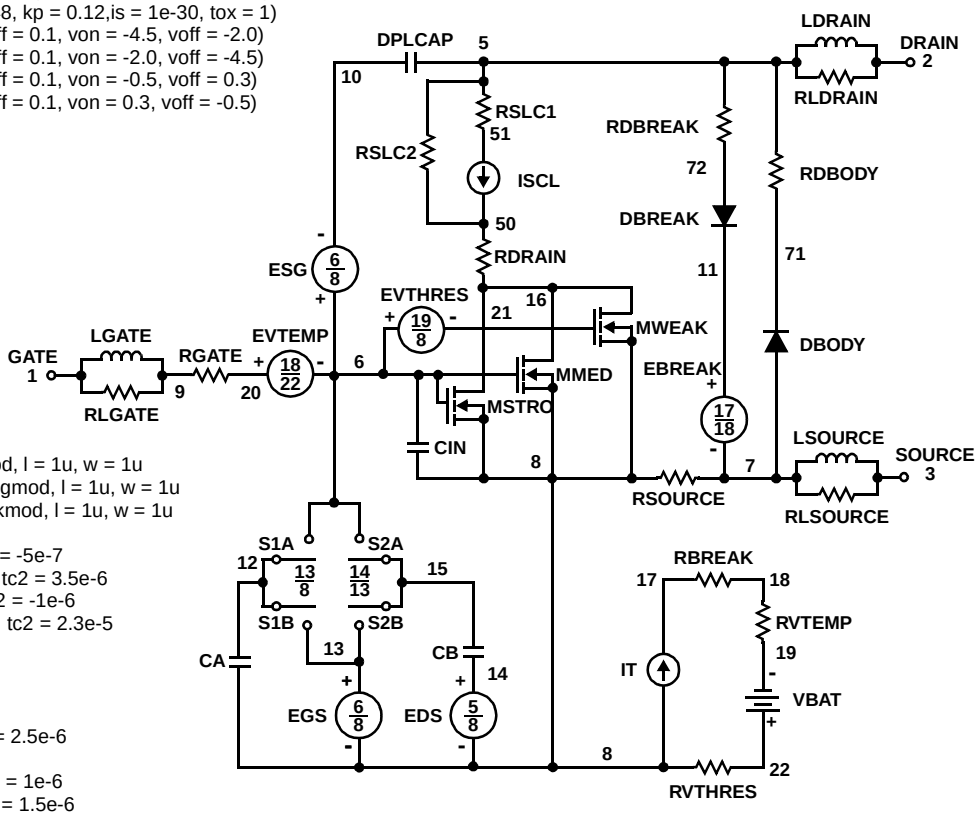
res.rbreak n17 n18  = 1, tc1 = 1.05e-3, tc2 = -5e-7
res.rdbody n71 n5 = 2.65e-3, tc1 = 1.5e-3, tc2 = 3.5e-6
res.rdbreak n72 n5 = 2.5e-1, tc1 = 1e-4, tc2 = -1e-6
res.rdrain n50 n16  = 15.8e-3, tc1 = 8.5e-3, tc2 = 2.3e-5
res.rgate n9 n20 = 1.94
res.rldrain n2 n5 = 10
res.rlgate n1 n9 = 51
res.rlsource n3 n7 = 31
res.rslc1 n5 n51  = 1e-6, tc1 = 3.4e-3, tc2 = 2.5e-6
res.rslc2 n5 n50 = 1e3
res.rsource n8 n7  = 3.6e-3, tc1 = 1e-3, tc2 = 1e-6
res.rvtemp n18 n19  = 1, tc1 = -1.7e-3, tc2 = 1.5e-6
res.rvthres n22 n8  = 1, tc1 = -1.9e-3, tc2 = -4.5e-6

spe.ebreak n11 n7 n17 n18 = 118.2
spe.eds n14 n8 n5 n8 = 1
spe.egs n13 n8 n6 n8 = 1
spe.esg n6 n10 n6 n8 = 1
spe.evtemp n20 n6 n18 n22 = 1
spe.evthres n6 n21 n19 n8 = 1

sw_vcsp.s1a n6 n12 n13 n8 = model = s1amod
sw_vcsp.s1b n13 n12 n13 n8 = model = s1bmod
sw_vcsp.s2a n6 n15 n14 n13 = model = s2amod
sw_vcsp.s2b n13 n15 n14 n13 = model = s2bmod

v.vbat n22 n19 = dc = 1

equations {
i (n51->n50) + = iscl
iscl: v(n51,n50) = ((v(n5,n51)/(1e-9+abs(v(n5,n51))))*((abs(v(n5,n51)*1e6/99))** 3.5))
}
}
```



## SPICE Thermal Model

REV 26 July 1999

HUF76639T

CTHERM1 th 6 3.2e-3
CTHERM2 6 5 8.5e-3
CTHERM3 5 4 1.2e-2
CTHERM4 4 3 1.6e-2
CTHERM5 3 2 5.5e-2
CTHERM6 2 tl 1.5

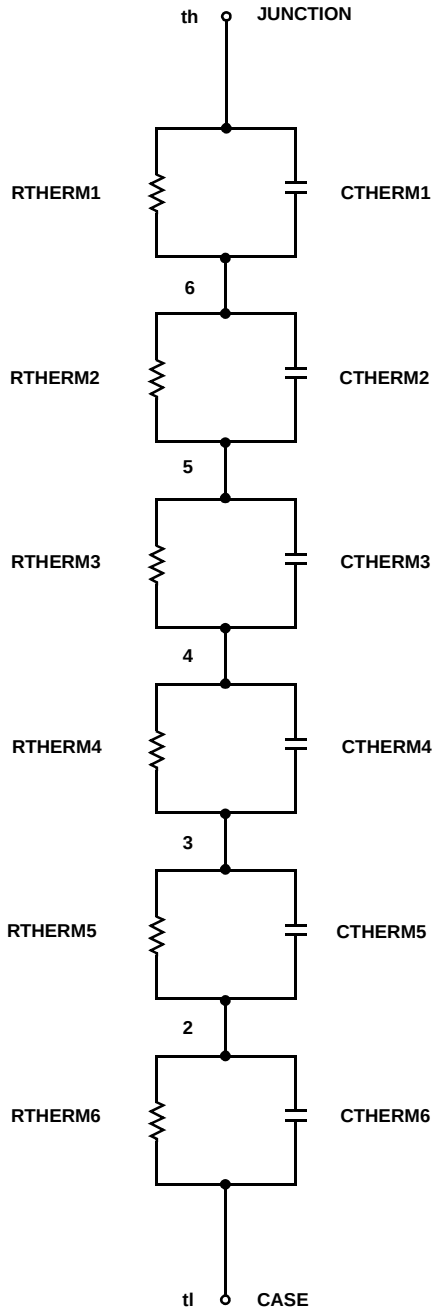
RTHERM1 th 6 8.0e-3
RTHERM2 6 5 6.8e-2
RTHERM3 5 4 9.2e-2
RTHERM4 4 3 2.0e-1
RTHERM5 3 2 2.4e-1
RTHERM6 2 tl 5.2e-2

## SABER Thermal Model

SABER thermal model HUF76639T

template thermal_model th tl
thermal_c th, tl
{
ctherm.ctherm1 th 6 = 3.2e-3
ctherm.ctherm2 6 5 = 8.5e-3
ctherm.ctherm3 5 4 = 1.2e-2
ctherm.ctherm4 4 3 = 1.6e-2
ctherm.ctherm5 3 2 = 5.5e-2
ctherm.ctherm6 2 tl = 1.5

rtherm.rtherm1 th 6 = 8.0e-3
rtherm.rtherm2 6 5 = 6.8e-2
rtherm.rtherm3 5 4 = 9.2e-2
rtherm.rtherm4 4 3 = 2.0e-1
rtherm.rtherm5 3 2 = 2.4e-1
rtherm.rtherm6 2 tl = 5.2e-2
}



ON Semiconductor and ON are trademarks of Semiconductor Components Industries, LLC dba ON Semiconductor or its subsidiaries in the United States and/or other countries. ON Semiconductor owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of ON Semiconductor's product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent−Marking.pdf. ON Semiconductor reserves the right to make changes without further notice to any products herein. ON Semiconductor makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ON Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using ON Semiconductor products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by ON Semiconductor. "Typical" parameters which may be provided in ON Semiconductor data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. ON Semiconductor does not convey any license under its patent rights nor the rights of others. ON Semiconductor products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use ON Semiconductor products for any such unintended or unauthorized application, Buyer shall indemnify and hold ON Semiconductor and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that ON Semiconductor was negligent regarding the design or manufacture of the part. ON Semiconductor is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

## PUBLICATION ORDERING INFORMATION

**LITERATURE FULFILLMENT**:
Literature Distribution Center for ON Semiconductor
19521 E. 32nd Pkwy, Aurora, Colorado 80011 USA
**Phone**: 303−675−2175 or 800−344−3860 Toll Free USA/Canada
**Fax**: 303−675−2176 or 800−344−3867 Toll Free USA/Canada
**Email**: orderlit@onsemi.com

**N. American Technical Support**: 800−282−9855 Toll Free USA/Canada
**Europe, Middle East and Africa Technical Support:**
Phone: 421 33 790 2910
**Japan Customer Focus Center**
Phone: 81−3−5817−1050

**ON Semiconductor Website**: **www.onsemi.com**

**Order Literature**: http://www.onsemi.com/orderlit

For additional information, please contact your local Sales Representative

ENTEGRECİ

Bu belge www.entegreci.com üzerinden sunulmaktadır.

# Elektronik komponent tedarikinde Entegreci

Entegreci, Eskişehir merkezli, Türkiye geneline satış yapan bir elektronik komponent mağazasıdır. Entegreler (IC), mikrodenetleyiciler, transistörler, diyotlar, pasif elemanlar, konnektörler, modüller ve geliştirme kartları tek adetten seri üretim adetlerine kadar satılır. Ürün sayfalarında güncel stok durumunu, fiyatı ve datasheet bağlantısını bulabilirsiniz.

### Parça koduyla arama

Üretici parça numarasını yazın; stok ve fiyatı hemen görün.

**www.entegreci.com**

### Ürün kategorileri

Entegreden kapasitöre tüm elektronik komponent kategorileri.

**Kategorilere göz atın**

### Üreticiler

Aradığınız üreticinin ürünlerini tek sayfada inceleyin.

**Üreticileri görün**

### Toplu alım ve teklif

Listede olmayan ya da yüksek adetli parçalar için teklif isteyin.

**Teklif isteyin**

**www.entegreci.com** | **destek@entegreci.com** | **0850 305 90 34**

Entegreci is an online electronic components store based in Türkiye. Search by manufacturer part number to see stock, prices and datasheets for integrated circuits, microcontrollers, transistors, passive components and connectors, or request a quote for parts that are not listed.

Bu sayfa Entegreci tarafından eklenmiştir. Belgenin önceki sayfaları asıl yayıncısına aittir ve içeriği değiştirilmemiştir; en güncel sürüm için belgenin yayıncısına başvurun.