

SOT-26



Pin Definition:

- | | |
|----------|-----------|
| 1. Drain | 6. Drain |
| 2. Drain | 5. Drain |
| 3. Gate | 4. Source |

PRODUCT SUMMARY

V_{DS} (V)	$R_{DS(on)}$ (m Ω)	I_D (A)
20	60 @ $V_{GS} = -4.5V$	-4.7
	100 @ $V_{GS} = -2.5V$	-3.8

Features

- Advance Trench Process Technology
- High Density Cell Design fPor Ultra Low On-resistance

Application

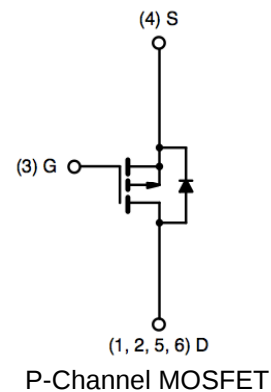
- Load Switch
- PA Switch

Ordering Information

Part No.	Package	Packing
TSM3443CX6 RFG	SOT-26	3Kpcs / 7" Reel

Note: "G" denote for Halogen Free Product

Block Diagram



Absolute Maximum Rating ($T_A=25^\circ C$ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current, V_{GS} @4.5V.	I_D	-4.7	A
Pulsed Drain Current, V_{GS} @4.5V	I_{DM}	-20	A
Continuous Source Current (Diode Conduction) ^{a,b}	I_S	-1.7	A
Maximum Power Dissipation	$T_A=25^\circ C$	2	W
	$T_A=70^\circ C$	1.3	
Operating Junction Temperature	T_J	+150	$^\circ C$
Operating Junction and Storage Temperature Range	T_J, T_{STG}	- 55 to +150	$^\circ C$

Thermal Performance

Parameter	Symbol	Limit	Unit
Junction to Case Thermal Resistance	$R\theta_{JC}$	30	$^\circ C/W$
Junction to Ambient Thermal Resistance (PCB mounted)	$R\theta_{JA}$	80	$^\circ C/W$

Note 1: Pulse width limited by the Maximum junction temperature

Note 2: Surface Mounted on FR4 Board, $t \leq 5$ sec

Electrical Specifications ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	$V_{GS} = 0V, I_D = -250\mu A$	BV_{DSS}	-20	--	--	V
Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = -250\mu A$	$V_{GS(TH)}$	-0.5	--	-1.4	V
Gate Body Leakage	$V_{GS} = \pm 12V, V_{DS} = 0V$	I_{GSS}	--	--	± 100	nA
Zero Gate Voltage Drain Current	$V_{DS} = -20V, V_{GS} = 0V$	I_{DSS}	--	--	-1.0	μA
On-State Drain Current ^a	$V_{DS} = -5V, V_{GS} = -4.5V$	$I_{D(ON)}$	-15	--	--	A
Drain-Source On-State Resistance ^a	$V_{GS} = -4.5V, I_D = -4.7A$	$R_{DS(ON)}$	--	48	60	m Ω
	$V_{GS} = -2.5V, I_D = -3.8A$		--	80	100	
Forward Transconductance ^a	$V_{DS} = -10V, I_D = -4.7A$	g_{fs}	--	11	--	S
Diode Forward Voltage	$I_S = -1.7A, V_{GS} = 0V$	V_{SD}	--	-0.8	-1.2	V
Dynamic ²						
Total Gate Charge	$V_{DS} = -10V, I_D = -4.7A,$ $V_{GS} = -4.5V$	Q_g	--	6	9	nC
Gate-Source Charge		Q_{gs}	--	1.4	--	
Gate-Drain Charge		Q_{gd}	--	1.9	--	
Input Capacitance	$V_{DS} = -10V, V_{GS} = 0V,$ $f = 1.0MHz$	C_{iss}	--	640	--	pF
Output Capacitance		C_{oss}	--	180	--	
Reverse Transfer Capacitance		C_{rss}	--	90	--	
Switching ³						
Turn-On Delay Time	$V_{DD} = -10V, R_L = 10\Omega,$ $I_D = -1A, V_{GEN} = -4.5V,$ $R_G = 6\Omega$	$t_{d(on)}$	--	22	35	nS
Turn-On Rise Time		t_r	--	35	55	
Turn-Off Delay Time		$t_{d(off)}$	--	45	70	
Turn-Off Fall Time		t_f	--	25	50	

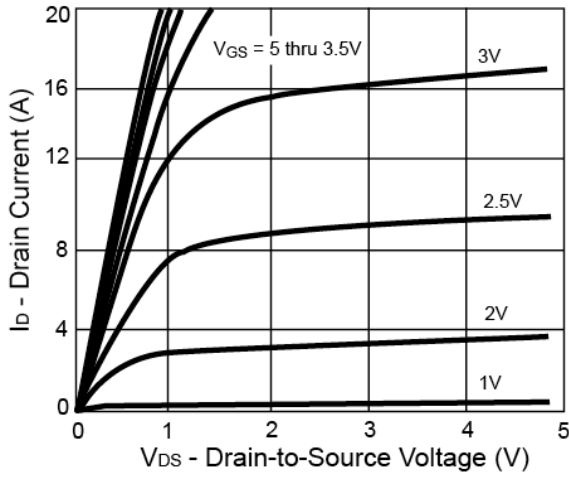
Note 1: Pulse test: $P_W \leq 300\mu S$, duty cycle $\leq 2\%$

Note 2: For DESIGN AID ONLY, not subject to production testing.

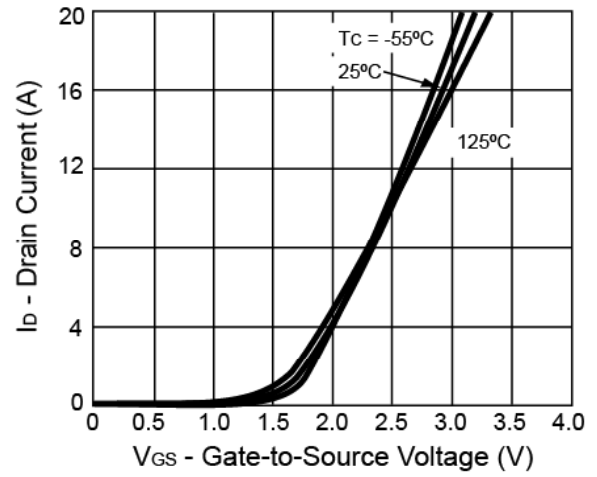
Note 3: Switching time is essentially independent of operating temperature.

Electrical Characteristics Curve ($T_A = 25^\circ\text{C}$, unless otherwise noted)

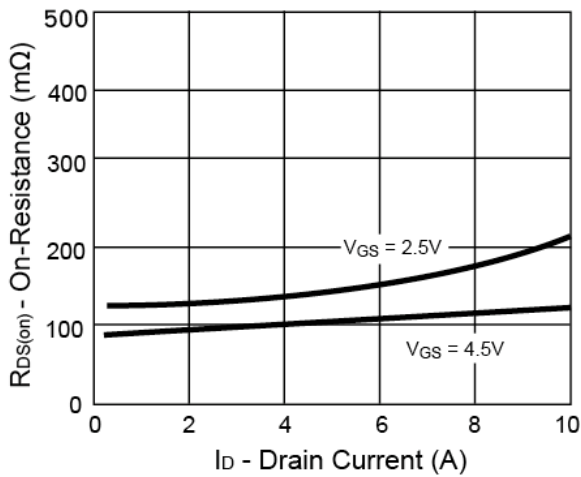
Output Characteristics



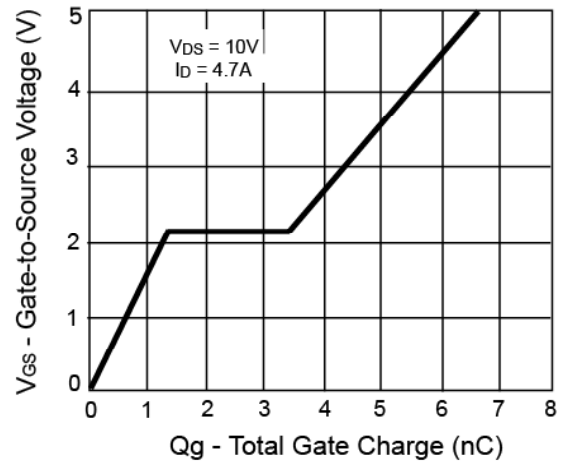
Transfer Characteristics



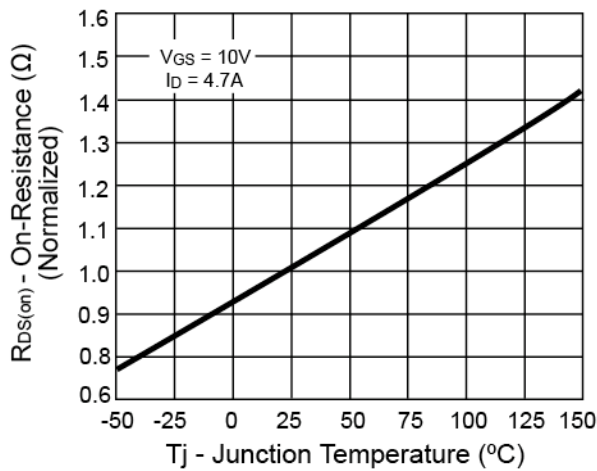
On-Resistance vs. Drain Current



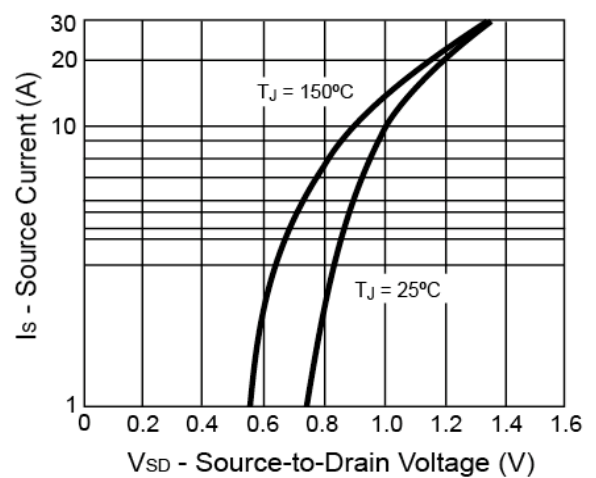
Gate Charge



On-Resistance vs. Junction Temperature

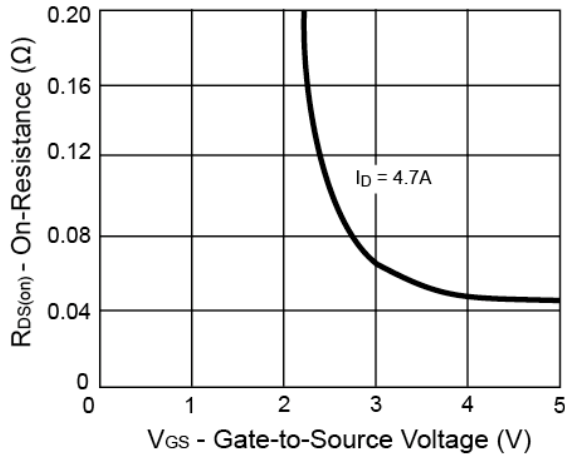


Source-Drain Diode Forward Voltage

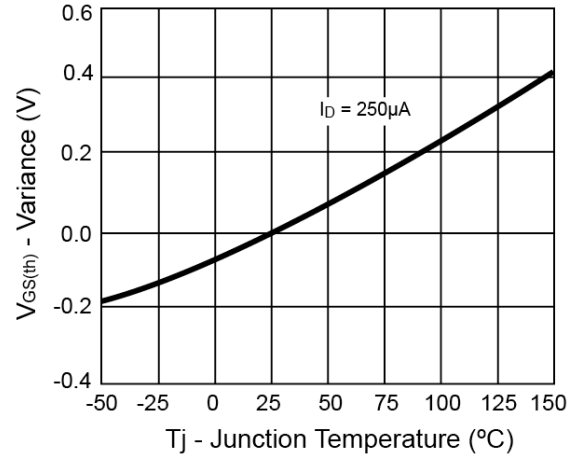


Electrical Characteristics Curve ($T_A = 25^\circ\text{C}$, unless otherwise noted)

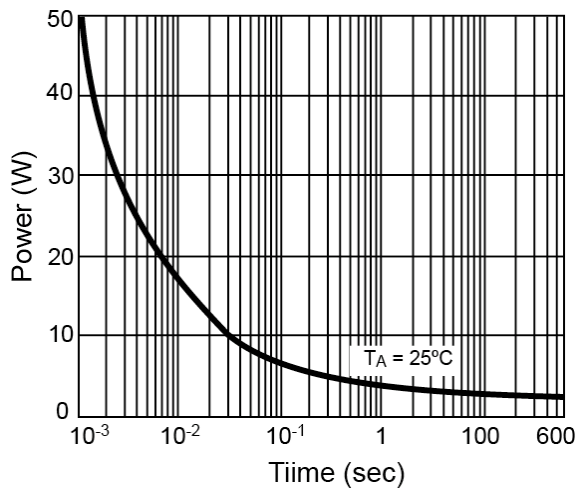
On-Resistance vs. Gate-Source Voltage



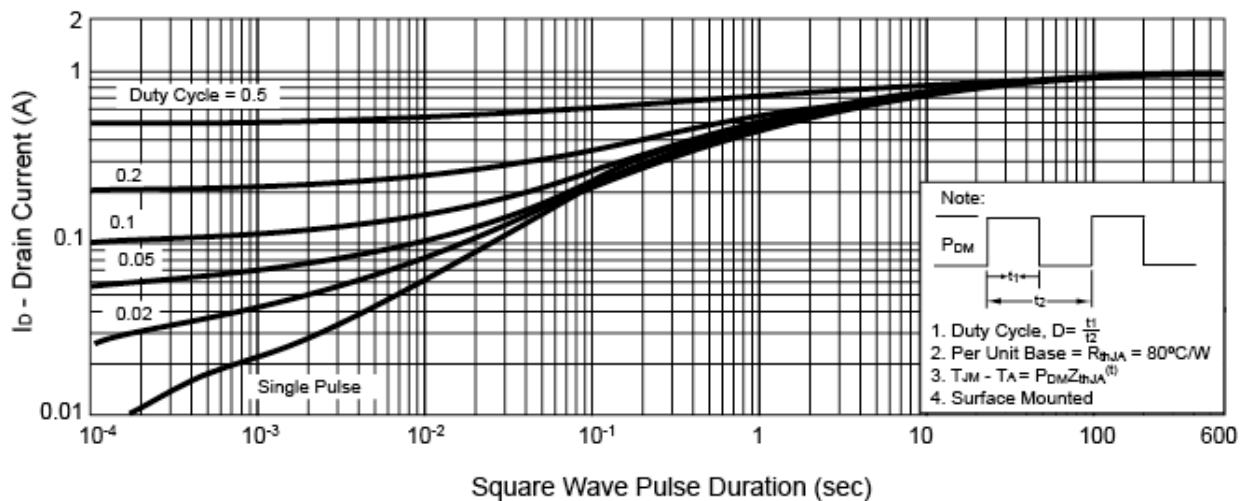
Threshold Voltage



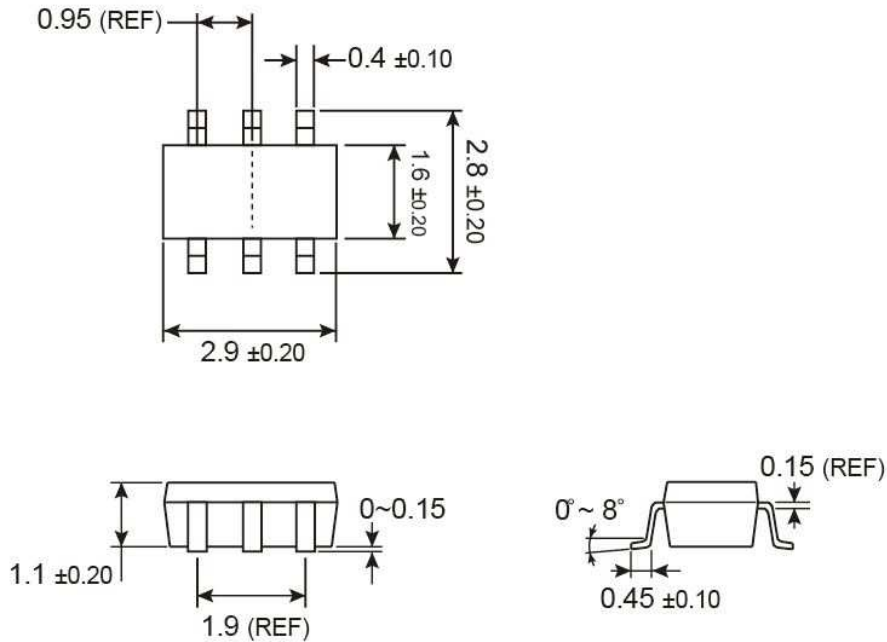
Single Pulse Power



Normalized Thermal Transient Impedance, Junction-to-Ambient

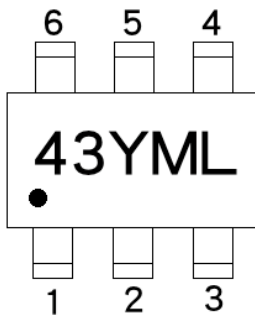


SOT-26 Mechanical Drawing



Unit: Millimeters

Marking Diagram



43 = Device Code

Y = Year Code

M = Month Code for Halogen Free Product

O =Jan **P** =Feb **Q** =Mar **R** =Apr

S =May **T** =Jun **U** =Jul **V** =Aug

W =Sep **X** =Oct **Y** =Nov **Z** =Dec

L = Lot Code

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